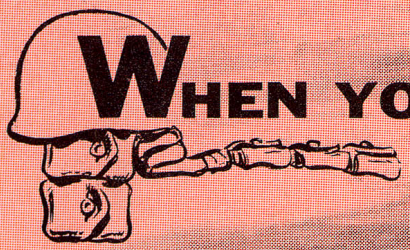
Issue 79
PS
1959 Series
THE PREVENTIVE MAINTENANCE MONTHLY
WAGONS HOOO.
SO YOU'RE THE GUY WHO DIDN'T DO HIS Q-SERVICE!
Will EISNER

PM FOR BATTLE

(Inspections for Combat, Too)



WHEN YOU—

CLEAN . .

ADJUST . .

LUBRICATE . .

FEEL . .

INSPECT . .

TIGHTEN . .

Is the biggest reason you do these things—

1. How nice your equipment will look?

Or—

2. How well your equipment will perform in combat?

It makes little difference how you answer the first question. But that No. 2 is what counts.

Forget about it, and it could mean the loss of you, your equipment, a battle, a war . . . and, maybe, our entire way of life.

The right kind of Preventive Maintenance—the kind that will make sure your equipment will perform in combat—is the only kind that really counts . . . comes the showdown.

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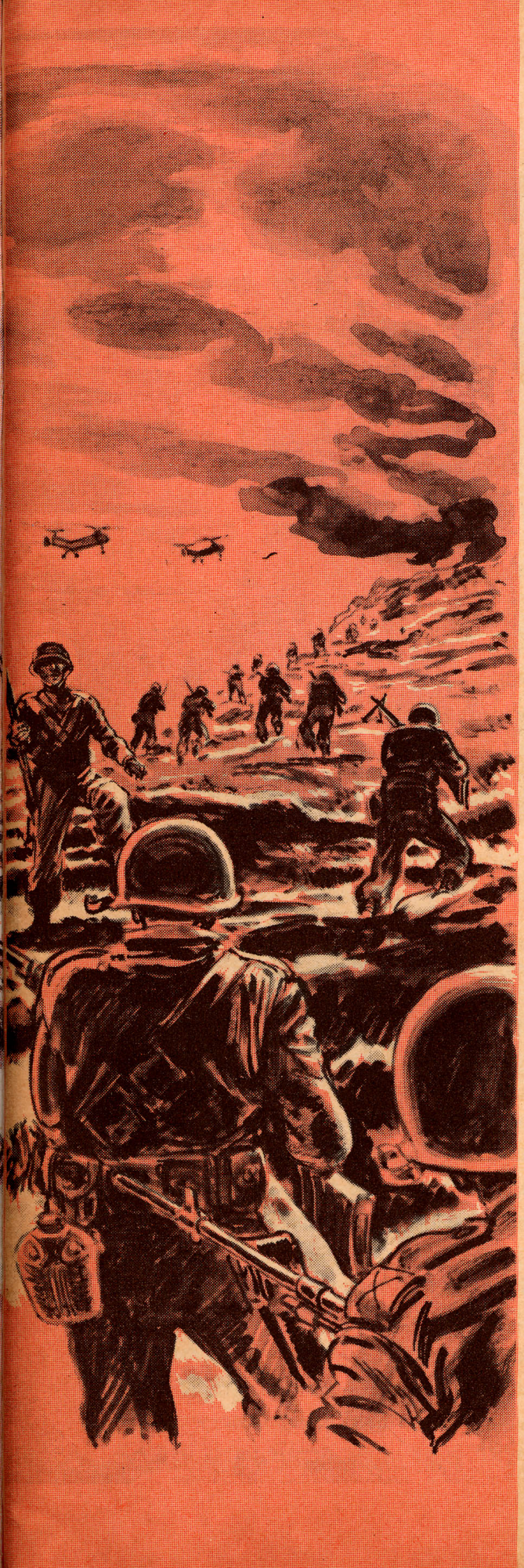

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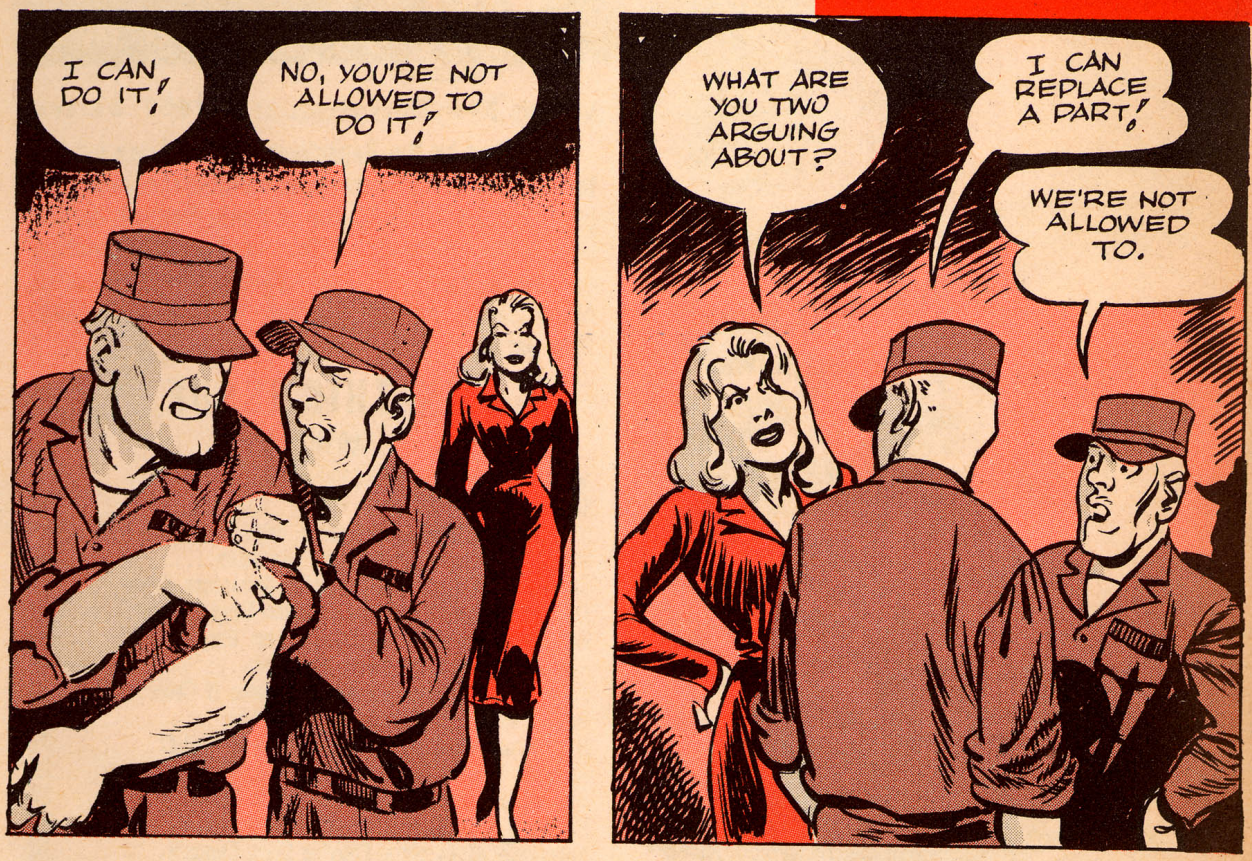


Here are some questions that had to be answered before it was decided which echelon of maintenance could do each job.

What is the mission of the user or organization which operates the equipment?
How much time can be spent on the job?
What MOS's (know how) are available to do the job?
Are the tools and test equipment available?

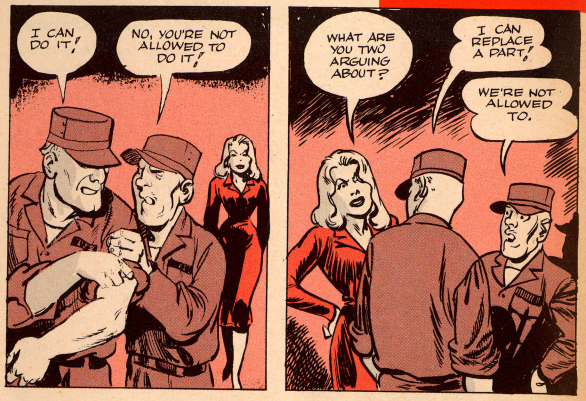
The answers to these questions by a lot of smart people putting their heads together results in a MAC. They want to make it easier for you men in the field to take care of your equipment. They've had to do a lot of figuring too, before they could come up with your MAC—cost of training men, cost of stocking parts, cost of tools, etc.

Once the questions have been answered, then your technical manual is written to go along with it—and parts are allocated for the job at the designated echelon.

There's a difference between your old-type manuals and the new ones coming out which have the MAC in them. Follow the MAC!

Like the law, if the MAC is wrong, it can be changed. Any time you find something in your MAC that doesn't agree with your latest repair parts list, fill

LET MAC* SETTLE IT



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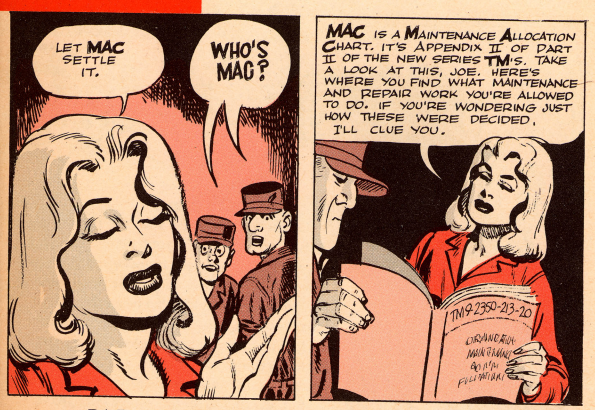

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*Maintenance Allocation Chart

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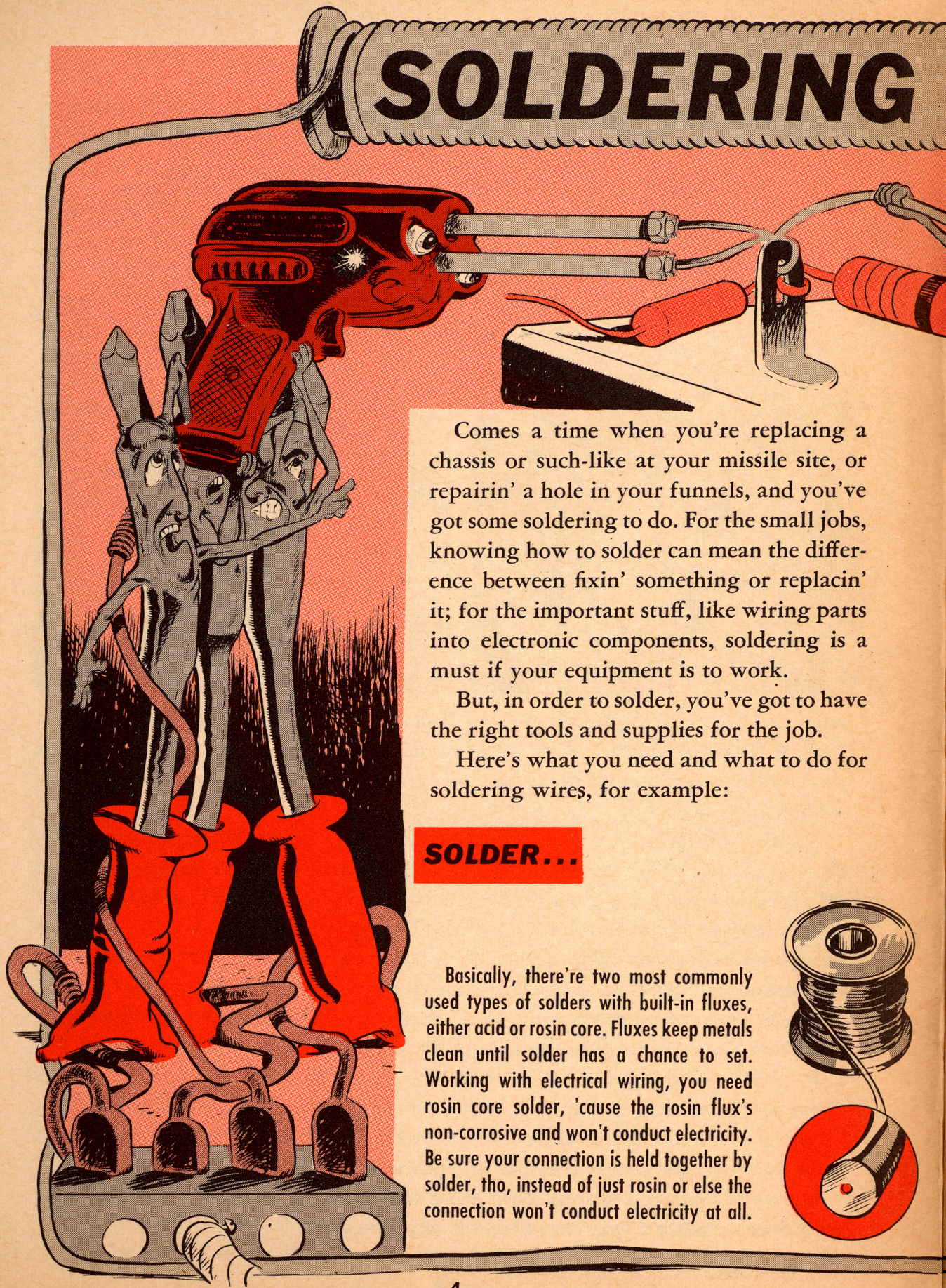
SOLDERING



Comes a time when you're replacing a chassis or such-like at your missile site, or repairin' a hole in your funnels, and you've got some soldering to do. For the small jobs, knowing how to solder can mean the difference between fixin' something or replacin' it; for the important stuff, like wiring parts into electronic components, soldering is a must if your equipment is to work.

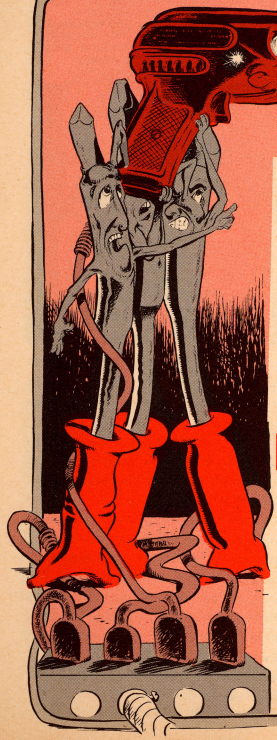
But, in order to solder, you've got to have the right tools and supplies for the job.

Here's what you need and what to do for soldering wires, for example:

SOLDER...

Basically, there're two most commonly used types of solders with built-in fluxes, either acid or rosin core. Fluxes keep metals clean until solder has a chance to set. Working with electrical wiring, you need rosin core solder, 'cause the rosin flux's non-corrosive and won't conduct electricity. Be sure your connection is held together by solder, tho, instead of just rosin or else the connection won't conduct electricity at all.

SOLDERING STORY



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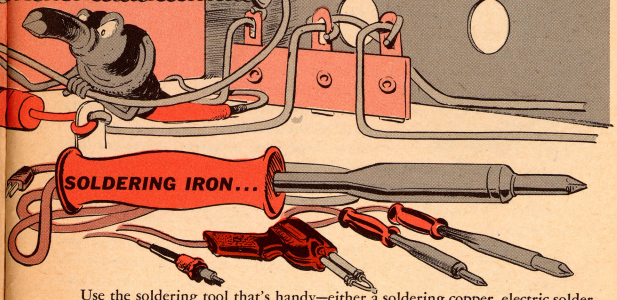
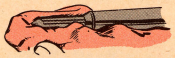


Use the soldering tool that's handy—either a soldering copper, electric soldering iron or gun, or the special tip for your oxy-acetylene job. Tip size will depend on the work you do—usually they come from ⅜ inch to 1⅝ inches in diameter.

Remove inside corrosion from element-type soldering irons and between the securing nuts and the tip on gun-type irons so's you get a good flow of heat. Always try to use a high wattage iron—more heat means less time is needed to make a connection, and there's less chance of damaging wire insulation and electrical components. 'Course, on real delicate equipment you don't want to overheat any parts.

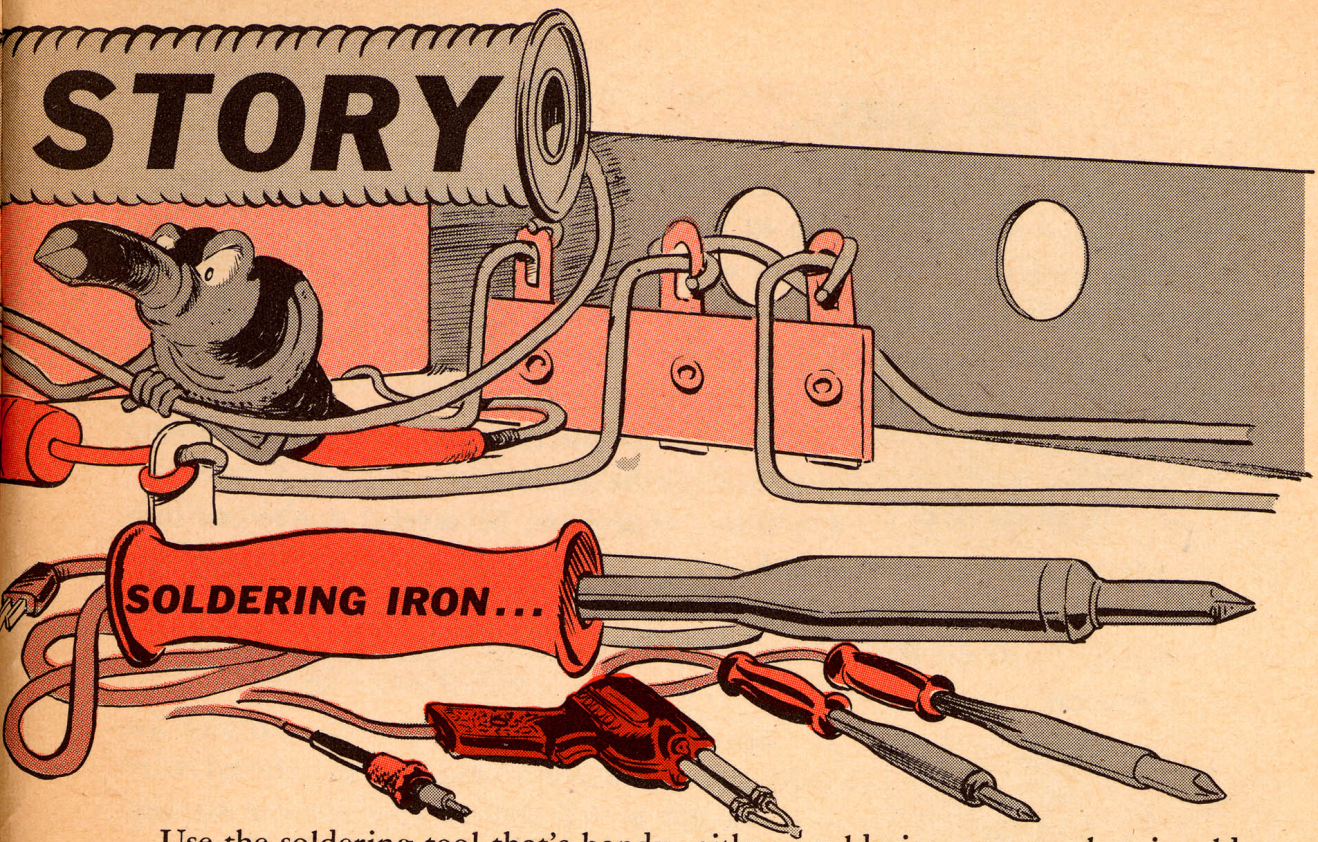
Before using your soldering iron, make sure it has a clean tip. Wipe it off with a clean rag.



If necessary, file the tip with an emery cloth or file to be sure you remove all the oxide film; otherwise, solder won't stick to it.

Tin the tip; heat the tool till it's hot enough to make the solder flow freely, then hold solder at the base of the tip and let it flow to the point evenly on all sides till it's coated. Shake off any excess globs.

Remember to wipe the tip after soldering each joint and it'll stay clean longer.



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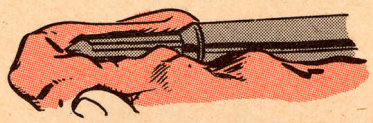

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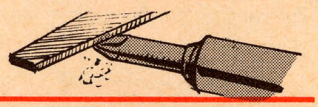

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THE WIRE...

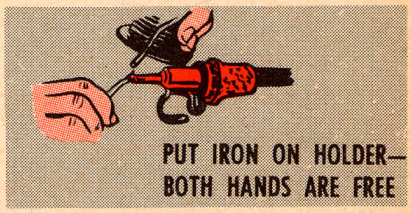
Get it ready by peeling back the insulation so's you have just enough bare wire to make a good mechanical connection. Use a pair of wire strippers, but if you don't have any, you can use a pen knife in a pinch. Don't nick the wire. A nick or cut causes a weak spot that'll break later.

Don't try to use pliers or any other such tool—too easy to damage the conductors.

On strand type wire, be careful not to cut into the strands. You may have to clean the wire by scraping with a knife if the wire happens to be coated with varnish. Twist the strands together to make a good connection.

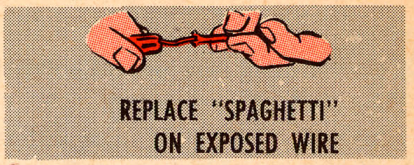
On heavier wire, wrap a paper clip around the twisted strands before tinning so the tinned wire won't "swell" at the end. Natch, remove the clip when you're through tinning the wire.

Tin the wire—like you tinned the soldering iron. Not too much solder—just enough to coat the wire strands lightly and evenly. It's easy if you set the iron on its holder and rotate the wire on the tip.



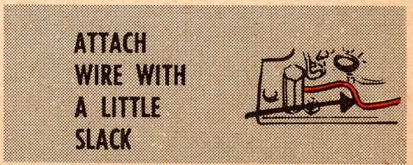
Careful if you're tinning wire which has plastic insulation—if you hold it with pliers, heat from your iron's apt to melt the insulation. Hold it with your hand. If you've made a good mechanical connection you shouldn't need pliers anyway.

If the wire you're replacing had a piece of spaghetti (protective covering) on it, be sure to put it back on; use spaghetti on any unprotected length of wire to keep it from shorting.



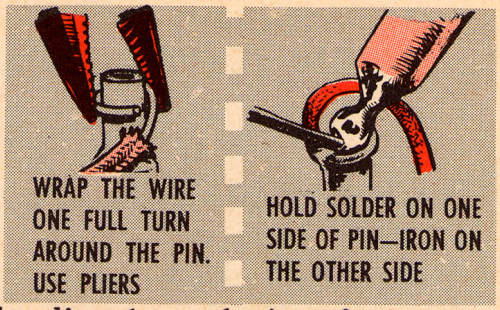
When attaching a new wire to a chassis, **always** follow the path of the old one—this'll not only make it easy for the next guy who works on that chassis later, but it'll prevent unwanted hum pickup, since the "dress" in a chassis is carefully calculated to make it work right.

Usually, you'll leave a "service loop"—an extra length of wire, so that if you ever have to resolder it, you'll have enough room to dress it back.



Clean and tin the pin or eye to which you're soldering the wire.

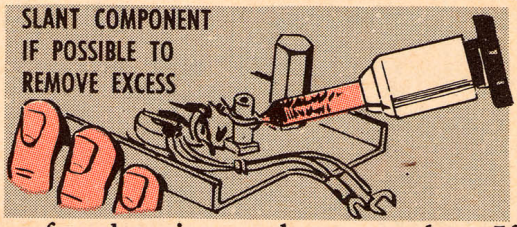
Wrap the tinned wire one full turn around the pin or thru the eye to make a good mechanical connection. Use pliers to bind it more snugly.



Solder the wire to the pin, holding solder on one side of pin, soldering iron on the other side, so's heat will flow thru pin to melt solder. You may have to hold the solder directly on the iron for a second to start it flowing. Maintain heat on the pin until you have a good joint.

Keep the wire steadily in place till solder's cool. (Just takes a few seconds.) If you move the wire beforehand, you'll have a cold joint—two metals held by hardening of the flux, rather than fusion of the metals. Use a pair of long nose pliers to hold the wire (if it isn't plastic coated) between the soldering iron and the part. The pliers'll take away some of the heat which could damage delicate parts.

You'll know you have enough solder when you can still see the general shape of the joint being soldered. If you can count the strands of the soldered wire, you don't have enough solder.

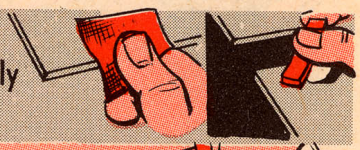


Remove any excess globs of solder from the joint by holding the hot iron to the base of the glob and letting the excess flow up the tip.

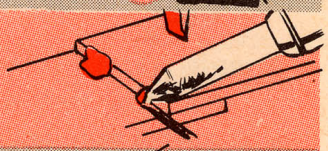
Remember—too much solder makes it easy for the pins to short together. If possible, shake the component lightly to remove the loosened solder globs. Try to protect surrounding parts from the globs by covering the parts with any non-conducting material handy.

TO SOLDER TWO PIECES OF METAL:

Clean the face and edges of the metals with emery cloth and apply a thin smear of flux to both cleaned surfaces.

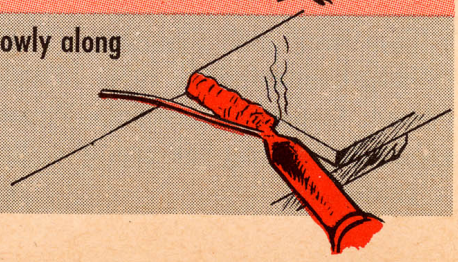


Place the edges together and hold them firmly in place with a screw-driver or tang of a file and tack both ends of the seam by applying small bits of solder.



Starting at one end, move the point of the soldering iron slowly along the seam, adding solder if necessary, to get a smooth seam.

Turn the surface over and seam the other side.

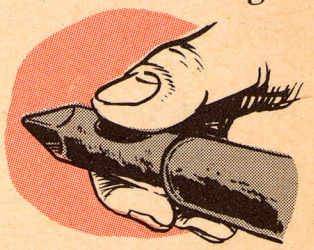


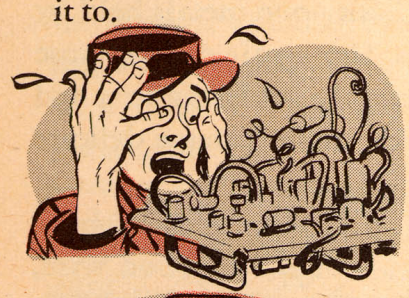
A FEW HANDY TIPS:

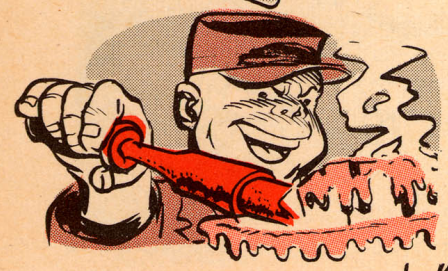
Clean all metal surfaces thoroughly. Oxides and oil films are taboo for good soldered connections.

Always tin each piece of metal before soldering.

Never touch the cleaned tip of the soldering iron—oil from your skin will foul up the works. Same goes for touching tinned wire, or the tinned part you're soldering it to.



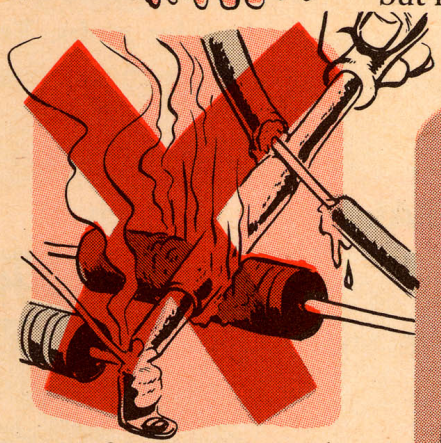




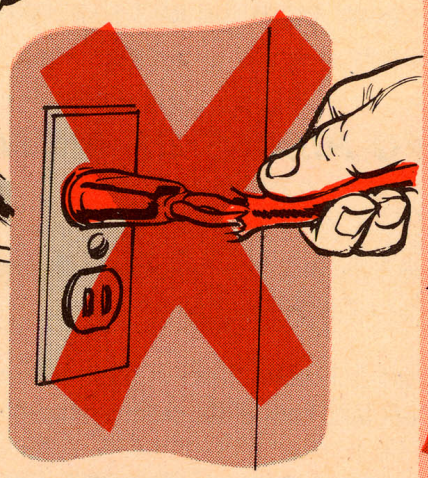
When soldering wiring, do one job at a time, and keep checking your diagrams or schematics to be sure you've got everything hooked up right. It's easier to do it right the first time than to go back and do it over.

Always put the new or replacement part in the same physical location as the old one. Your old wire'll be the right length and you'll know what you're doing when you look at your wiring diagrams.

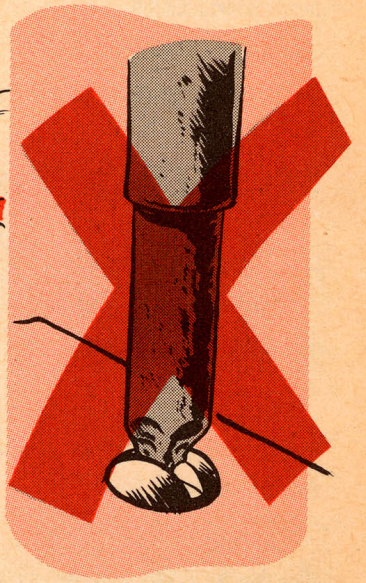
Remember that solder will flow to the heat source, so don't hold your soldering iron to the wire too long. You want enough heat to make the solder flow freely, but not enough to damage the parts you're working on.



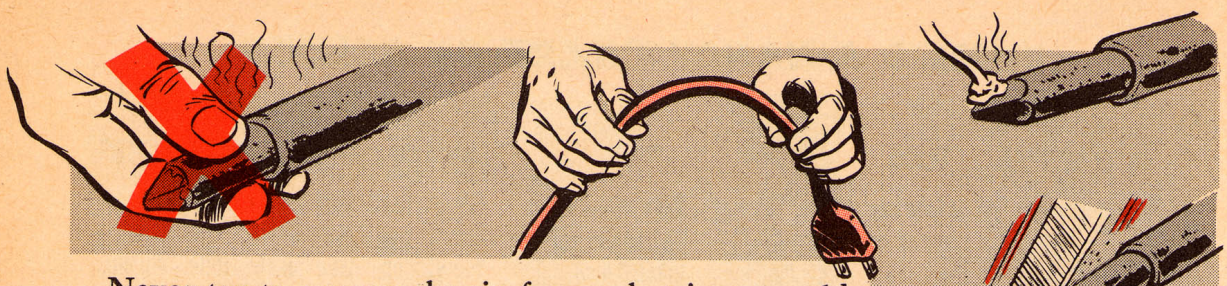
Be careful to keep the soldering iron away from any other wires or parts close by your work—and puleeeze, keep your mind on your work. Keep the business end of your tool away from your buddies, too.



When removing the load plug from the electrical socket—grip the plug itself. Saves wear and tear on your cord and plug.



Never use the tip of your iron as a screwdriver or wedge.



Never try to remove the tip from a hot iron—could damage the threads, or burn yourself.

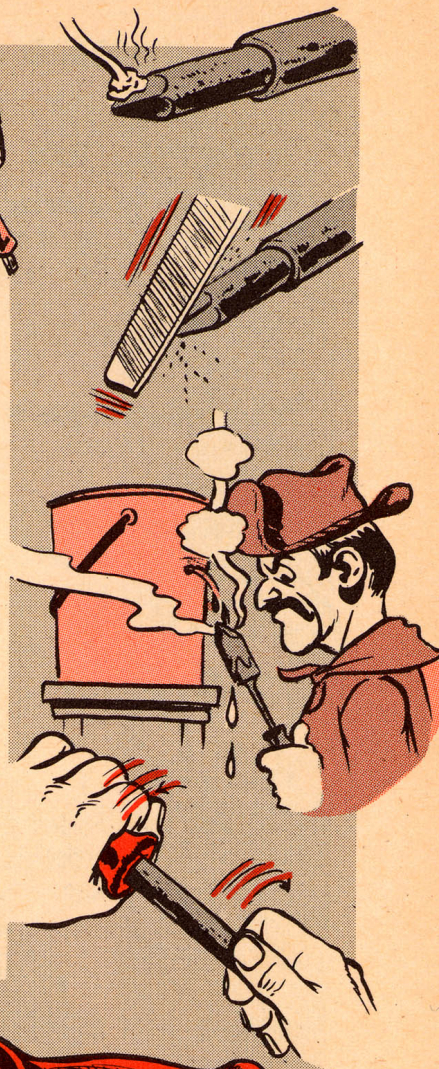
Inspect the cord for frayed or cracked insulation—you don't want it to short out.

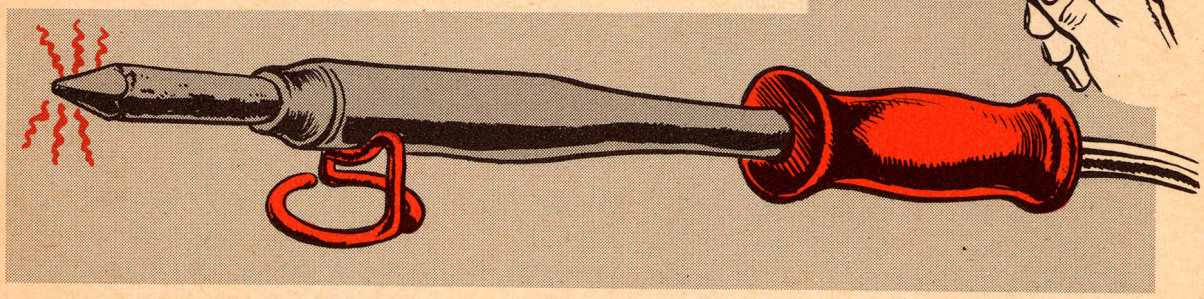
Always clean and tin your iron before putting it away, to keep oxides from forming on the tip.

Never try to solder a container which has liquid in it—the liquid'll take away your heat; and always make sure any container is clean before you start. If you must solder a container with liquid in it, make sure the liquid's non-flammable and that the liquid level is below the point you're soldering.

Check the wooden handle of your soldering copper to be sure it's tight.

When not in use, put your soldering iron on its holder—never on an unprotected surface.





TIPS ON SOLDERS:

For most work, you'll use soft solders, which are alloys of tin and lead. You can tell how much of each is contained by the number, like 40/60, which means the solder's 40 per cent tin and 60 per cent lead. The more tin you have, the faster cooling, softer and more pliable the solder, while the more lead you have makes it slower cooling, hard and brittle.

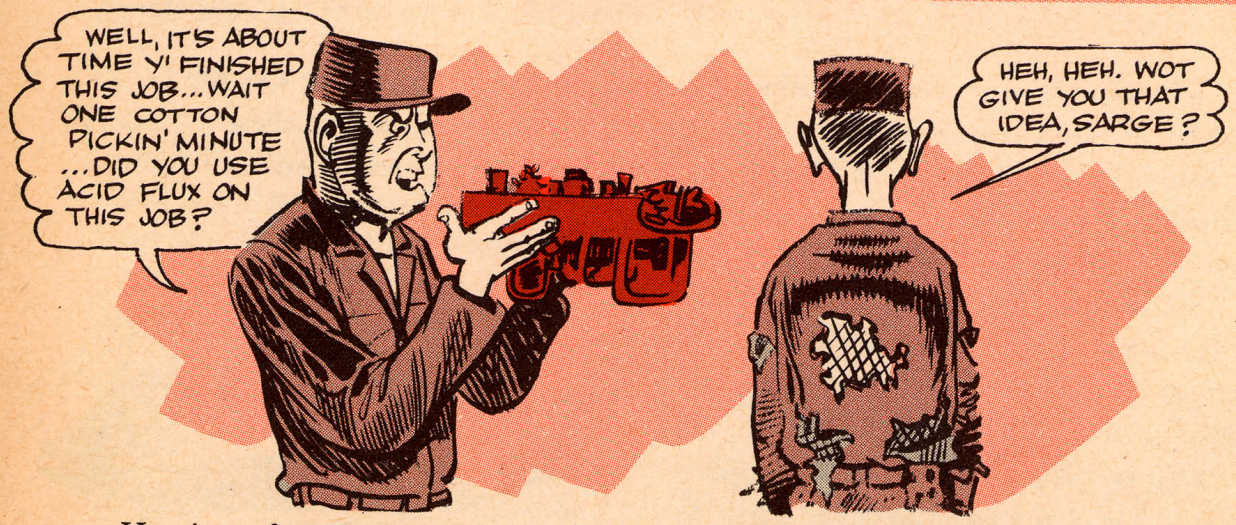
You use slow-cooling soft solder when you want nice smooth joints, while the fast-cooling stuff comes in handy when you can't hold the metals rigid for any great length of time. The big advantage to soft solder, o'course, is its low temperature flow point. Makes it easy to handle. Solder that's 60/40 needs the least heat and the least time to apply.

HERE'S A HANDY CHART ON SOLDER:

MATERIAL TO BE SOLDERED	TOOL	SOLDER	FLUX	SPECIAL PREPARATION OR TIPS
Tin and lead	Soldering copper or iron	50/50, 60/40, 40/60	Zinc chloride, but rosin, tallow, glycerin or stearine may be used to prevent corrosion	Clean lead surface with a scraper. Don't overheat iron; never use a blowtorch. Use very little solder. Let metal cool naturally and remove flux with water and soda solution.
Zinc, galvanized steel	Copper or iron	50/50	Zinc chloride	Don't overheat tool; always use a well-tinned tool; allow metal to cool, then remove acid with water.
Stainless steel	Large copper or iron	60/40, 70/30, 50/50	Hydrochloric acid	Etch metal surface with hydrochloric acid, applying acid w/brush; let etch for a few minutes, then remove with soda and water solution by wiping with a damp rag; solder as soon as possible. Too much heat may make metal bulge; let parts cool naturally before washing off acid residue with soda and water solution.
Black iron	Soldering copper or iron	50/50, 40/60, 60/40	Zinc chloride	Remove oxide scale by grinding or filling or by applying alternate amounts of sal ammoniac and muriatic acid while heating. Allow metals to cool very slowly; remove acid with water.
Copper & copper alloys	Blowtorch or soldering copper or iron	Silver solder or 50/50	Zinc chloride rosin (muriatic acid for brass)	A blowtorch works best. You need lots of heat; when through soldering, wash thoroughly with water.
Aluminum & aluminum alloys	Soldering copper or iron	Special solder of 50 to 75% tin, 50 to 25% zinc— or regular 50/50	Muriatic acid with 25% zinc chloride or stearine	In heating metal for tinning, don't let heat burn thru thin metal; keep flame in motion. Use lots of solder rubbing it in with steel bristled brush; keep solder hot while rubbing it into metal. Solder will collect in small globs at first and show no sign of forming film. Scratch area being tinned until globs break down. Several reheatings may be necessary. Use very hot soldering copper. Let work cool naturally, then remove flux with water-soda solution.
Electrical wiring	Soldering copper or iron	50/50, 60/40, 40/60	Rosin	Be sure to bring rosin on contact with metals to be soldered so it has a chance to prevent oxide film; use enough heat to dissolve it completely so it doesn't become part of the soldered joint.

HERE'S A HANDY CHART ON FLUXES:

FLUX	TYPE	FORM	CORROSIVE	USED WITH
Hydrochloric (Muriatic)	Acid	Liquid	Yes	Stainless steel, galvanized iron
Rosin	Grease or Wax	Lump, powder, paste, liquid	No	Electrical wiring, tin, copper, lead, brass
Tallow	Grease or Wax	Paste	No	Lead
Stearine	Grease or Wax	Paste	No	Aluminum, lead
Ammonium chloride (Sal ammoniac)	Salt	Cake, liquid	Yes	Tinning soldering iron (as cleaner)
Zinc chloride	Salt	Powder, liquid	Yes	Copper, galvanized iron and steel, zinc
Glycerin		Liquid		Pure tin, tin alloys

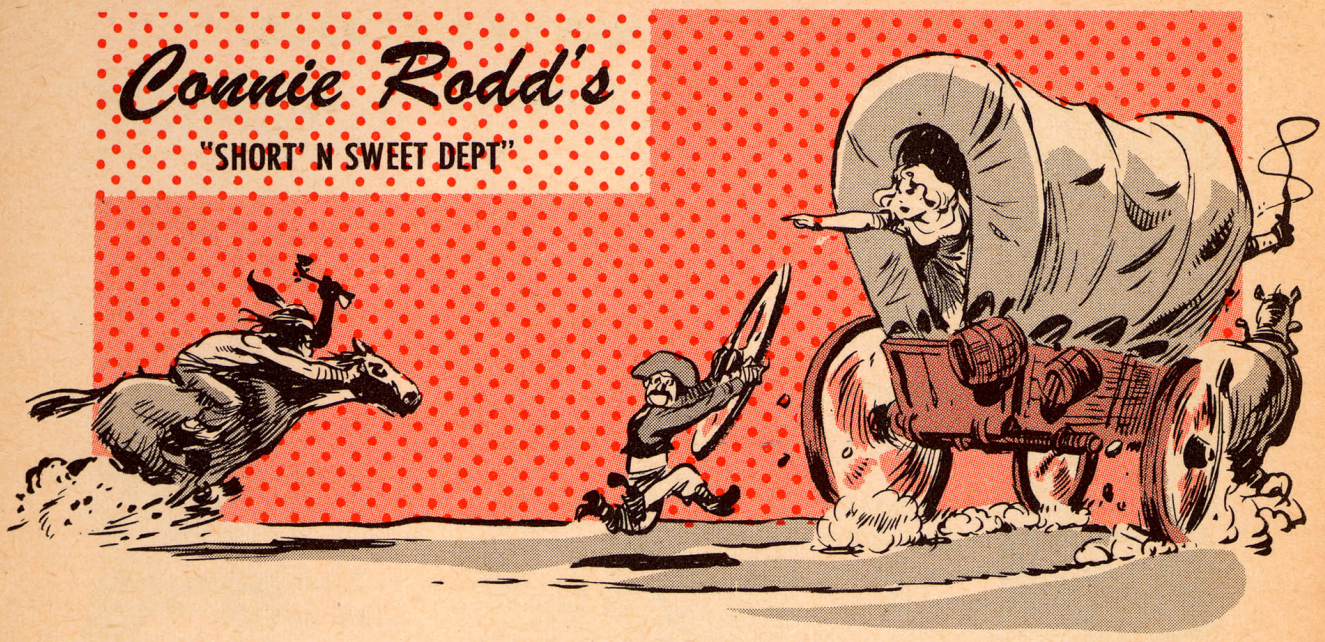


Here're a few tips to remember when using fluxes which aren't built into the solder:

1. Acid flux is highly corrosive, so don't **ever** use it on electrical connections or when it could spatter on nearby work. If it comes in contact with cotton or silk-covered wires, it'll eat right through and destroy their insulating properties. Use acid flux for large, flat work on joints which are clear of other parts. The work must be easy to reach for cleaning to remove any acid left on the metal, too.

2. Be sure to clean all joints thoroughly when you're through, especially if you've used rosin-core solder. Rosin is an insulator and, in missile equipment, it could break off from shock or vibration and lodge in critical areas.

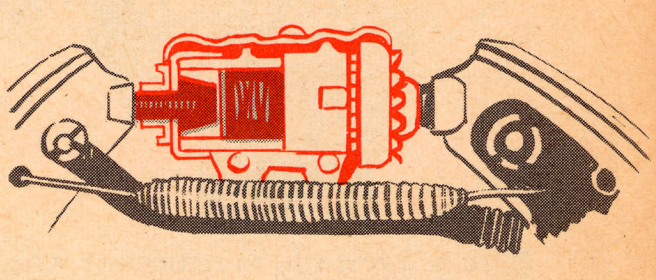
3. And remember—pastes with either grease or wax are no-go around electrical work—they're best used for tinning soldering irons and soldering small metal surfaces together.



No fooling around on this one

Wheel cylinders are something you don't want to fool with. On the G749-series 2½-ton trucks, though, there have been many reports of these cylinders rusting and corroding. It's serious—here's why. With rusted or corroded wheel cylinders, the brakes of a truck can lock, sending it out of control.

So, what do you do? You take whatever maintenance measures you can to try and stop a serious accident before it happens.



OK—what's some of these maintenance measures you can take? First, at every Q service you make sure those wheels are pulled and those cylinders examined from stem to stern. If they need replacing, you get them replaced.

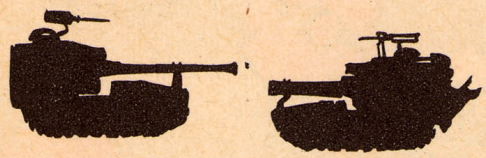
If your vehicles are stored, like in National Guard units, exercise the brakes every so often. This'll work the parts of the cylinder back and forth. When possible move the vehicle forward and backward and apply your brakes both ways—this'll get maximum movement of the cylinder piston.

Between Q services, if you have any doubts at all about the way your cylinders are acting, don't hesitate—pull the wheels and make sure. A few hours time can very well save your life or someone else's.

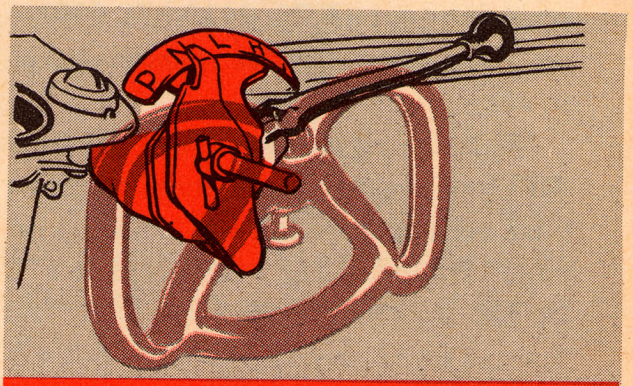
Any—any-any-any-trouble you have with the cylinders should be reported immediately by a UER. It's important that the people topside know exactly what's happening.

Grease it up

You oughta have the transmission shifting and steering control housing taken apart on your M53 SP gun and M55 howitzer and hand packed with GAA by your support unit. Otherwise, these controls are going to come to a gr-r-rinding halt.



M-53 M-55



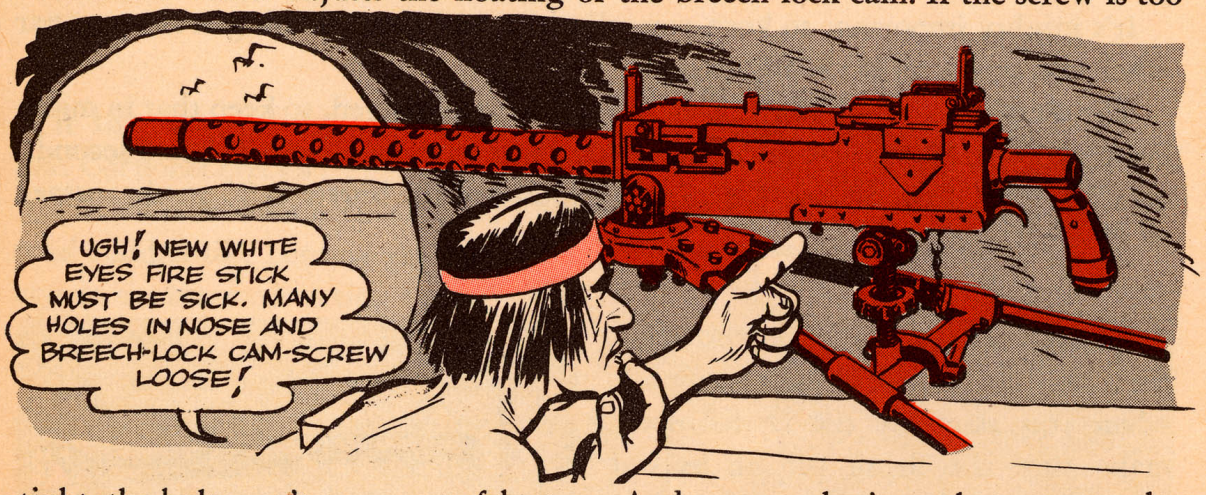
HOUSING SHOULD GET A HAND GREASE JOB ABOUT TWICE A YEAR

Without lube, the moving parts will score each other, become stiff and finally damage the soft, cast iron housing. So, until the new LO comes out with this info, remind the Ordnance guys to do a hand grease job on the housing about twice a year.

Bolt blues

Maybe you've run down your check list, and your 1919A4 or 1916A6 .30-cal light machine gun still gives you a hard time—like the bolt not coming out of battery or the barrel-extension slide-lock not holding the bolt in battery.

That's the time you want to ask your support unit to check the breech-lock cam-screw which adjusts the floating of the breech-lock cam. If the screw is too



tight, the bolt won't come out of battery. And a screw that's too loose means the barrel extension slide-lock won't hold the bolt in battery.

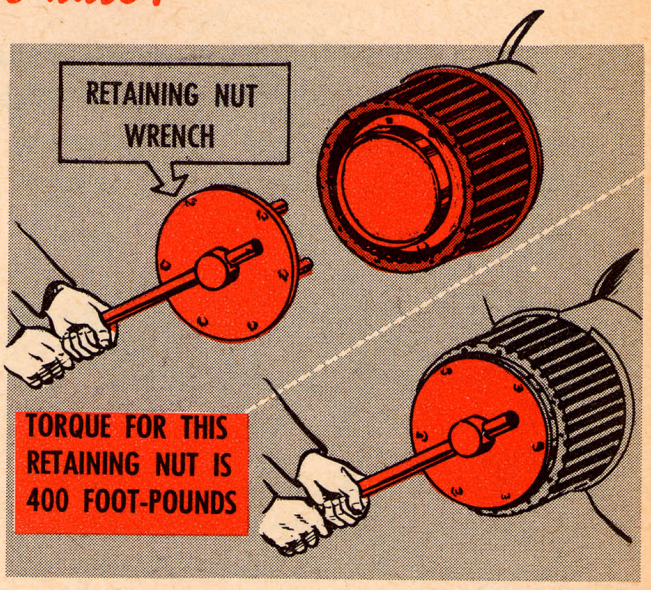
There's another "if"—if the sideplate says the gun is made by the Saginaw Company. It doesn't make no never-mind whether the cam floats. So the screw can be loose or tight.

The Ordnance boys'll work on the screw the way it says in TB Ord 587.

Got loose nuts?

You M56 self-propelled gun crewmen... been having trouble 'cause the retaining nut—FSN 2520-571-6592—on your drive sprocket carrier keeps loosening up?

Well, the right torque for this nut is **400** foot-pounds. Seems some gremlins have been at work in para 124b (4) on page 170 and in Fig 142B on page 172 of TM 9-2350-213-20 (Jun 58). The manual says it should be 50 foot-pounds but that's a misprint. It meant to say **400** foot-pounds.



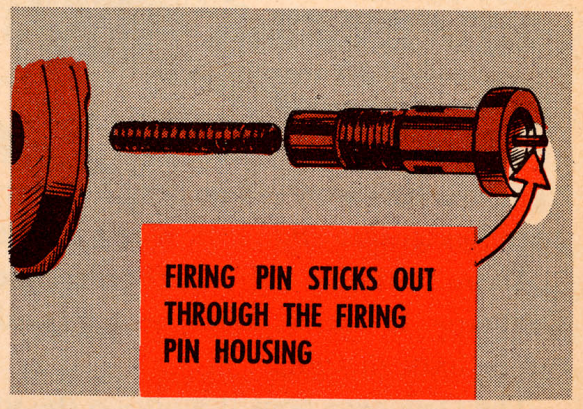
Keep your distance

It's mighty important to keep your distance and your pitching arm up to par when you throw an M15 WP grenade.

The specs on what this little fireball will do are changed, so keep that in mind. From now on, better reckon on fuze delay time anywhere from 2½ to 6 seconds, instead of 4-5 seconds, and the effective radius of the bursts as 35 yards, instead of 20.

Save the cam

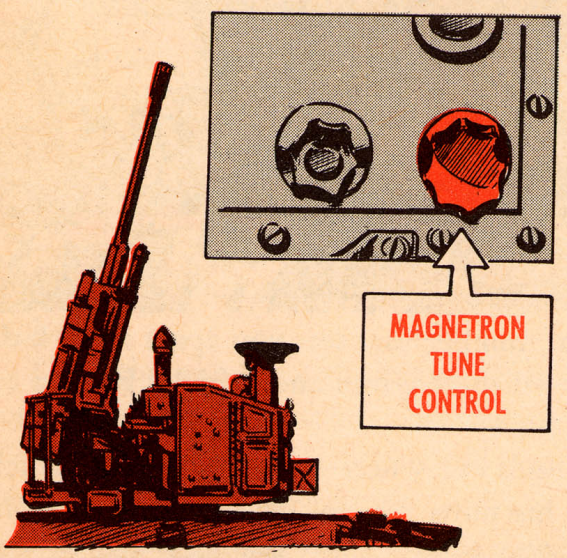
A quick tip for you guys who shoot the M40A1 106-mm recoilless rifle . . . when you assemble the breechblock, make sure the firing pin sticks out through the firing pin housing before you install the firing pin spring. If it doesn't, and after you have everything back together again, you'll bang up the cocking cam when you go to cock the weapon.



How's your box?

An easy way to get hit with a statement of charges for your tank's telephone box door is to leave it open when rolling along. In rough country, especially, the vi-vi-bray-shun will break the hinges of a door left swinging to and fro like a pendulum. Then you may not even have enough dough left for a weekend pass.

Halt at the stop



Whoa, thar...easy does it when you're making a fine tuning adjustment of the magnetron tune control in your M38 FCS.

Usually...you only need slight adjustment to get the most out of the radar. If you have to do a lot of retuning, tho, keep out of trouble with the tuning knob by turning it as far as the limit stop—no further.

When you jam the traveling nut against the stop, you may damage the equipment.

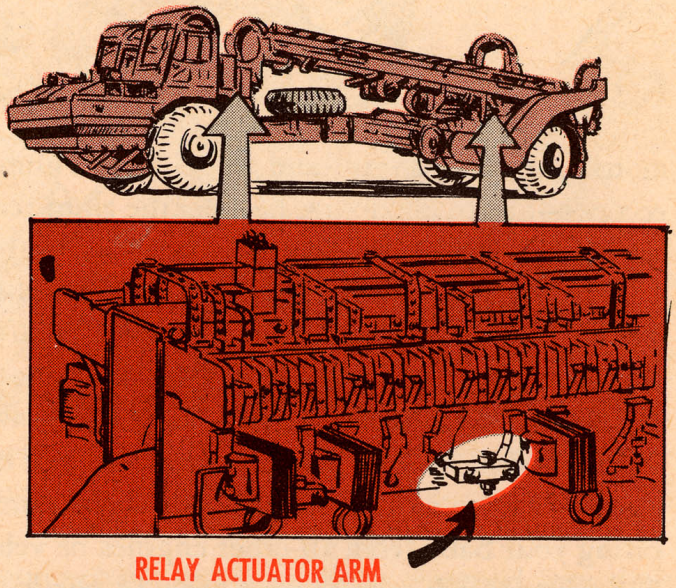
If you can't get the adjustment you want, call in your support unit.

In a bind?

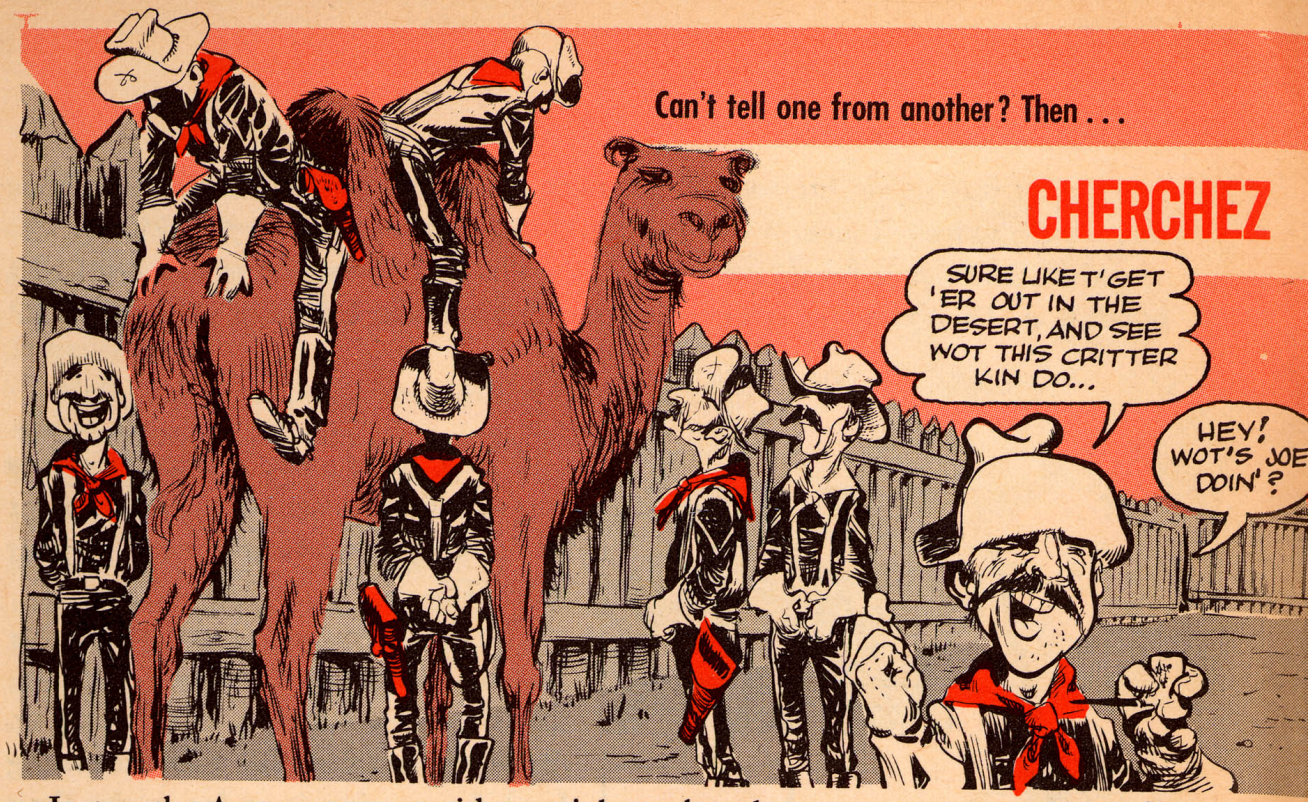
It sure was one big wreck—that Corporal erector.

The erector wandered off the road sudden-like because the relays in the interconnecting boxes got jammed.

The actual trouble was with the relay actuator arms—the arms between the K7 and K8 steering relays in the front interconnecting box and the K13 and K14 relays in the aft box.

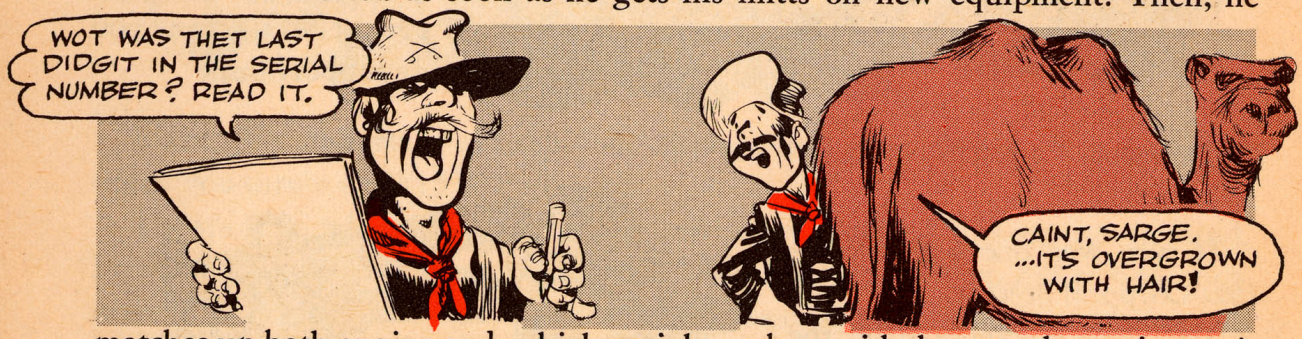


Seems the arms got to binding after a spell...so check them once a week. If they're in a bind, call your support unit. They'll lubricate 'em with plug valve grease.



Just as the Army tags you with a serial number that sets you apart as an individual soldier, the manufacturer marks all the engines and vehicles he puts together—wheeled or tracked or aircraft.

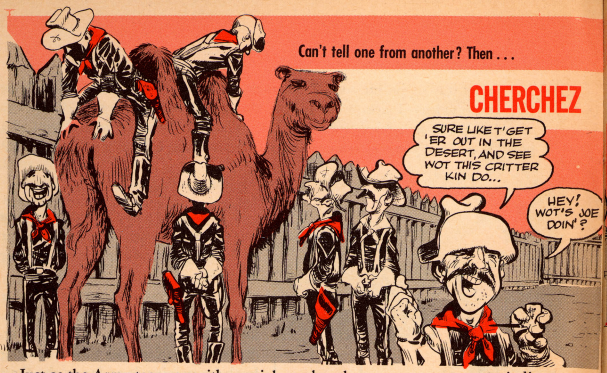
The smart operator (and mechanic) finds out where both engine and vehicle numbers are located as soon as he gets his mitts on new equipment. Then, he



matches up both engine and vehicle serial numbers with those on the equipment's records—just to make sure he's got the right records with the right piece of equipment.

Watch out for the Army registration number. That's the USA number painted on the sides and rear of your equipment. You're supposed to have both numbers on your jacket file (DA Form 478) and other records, too. But the manufacturer's numbers are the more important. Here's why—

You'll find a lot of places in your TM's, TB's, MWO's and other publications that refer to an engine or vehicle by serial number. This is a sure-fire way of separating your baby from all other engines or vehicles of the same make and model. For example, when a directive covers a particular group of engines or vehicles in the same family, you find it talks about the group as blocks of serial numbers—like 1722 to 2017, or 12 to 206.



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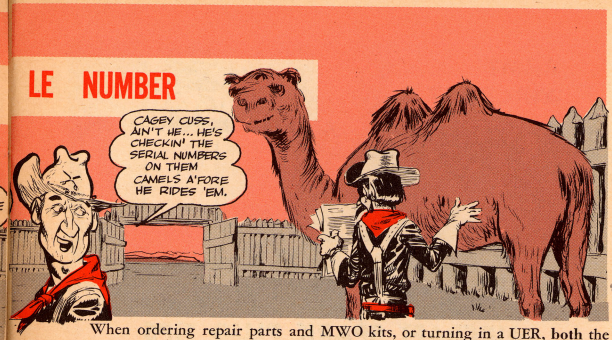


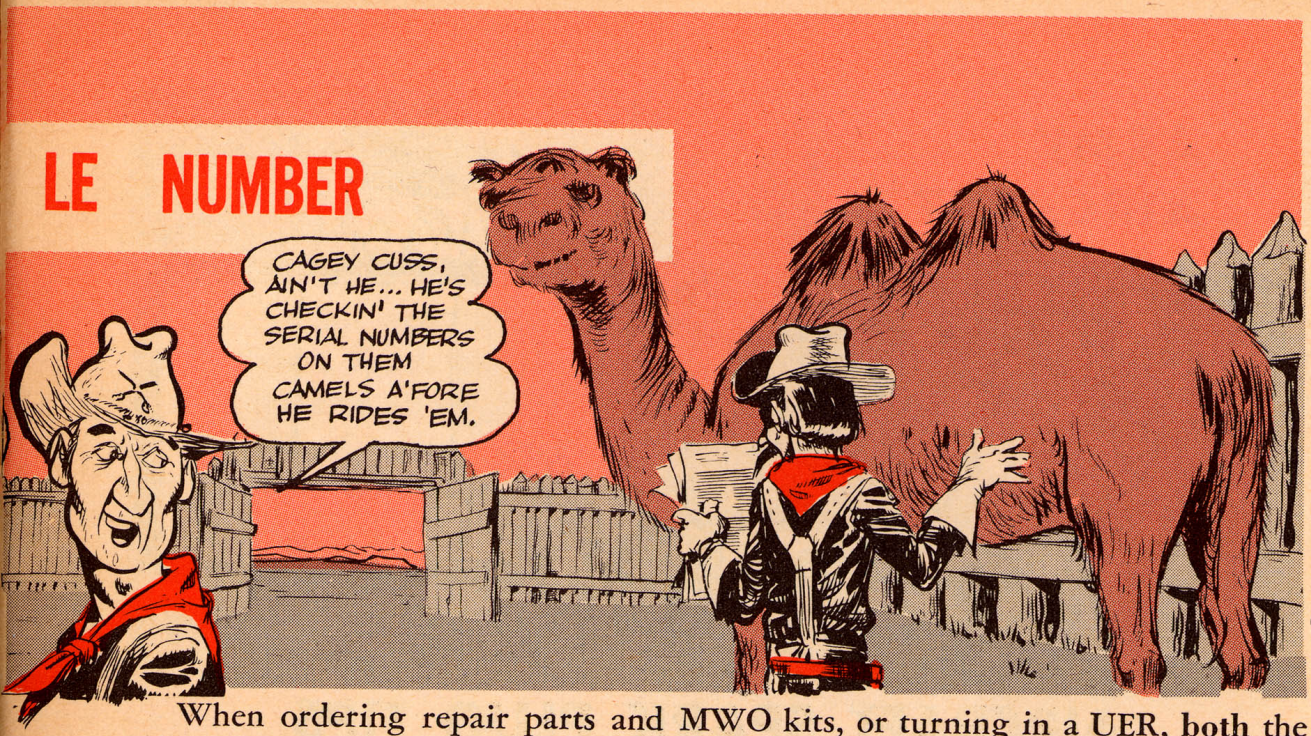
When ordering repair parts and MWO kits, or turning in a UER, **both** the Army's registration number and the manufacturer's serial number should be included.

The serial number is the key to when and where your engine or vehicle was put together. It's also the string that ties together the life history of the engine or vehicle—like which modifications and what types of maintenance or overhauls were done on her . . . at the factory . . . depot . . . or field maintenance shops.

Since each manufacturer has his own way of stamping in his serial numbers on the block and the chassis or hull, you'll probably find them in different places for each model engine and vehicle . . . like frontside, backside, inside, outside, topside, bottomside, longside, shortside, sideside . . . Sideside???

Well, anyway, you get the idea. Once you find the numbers, stick the location in your memory machine—and you'll always know who your equipment is and where she's been.

If you've also got both engine and vehicle serial numbers stamped into their own identification plates you've got it made in the shade. Just make sure you keep the letters and numerals clean and easy to read.



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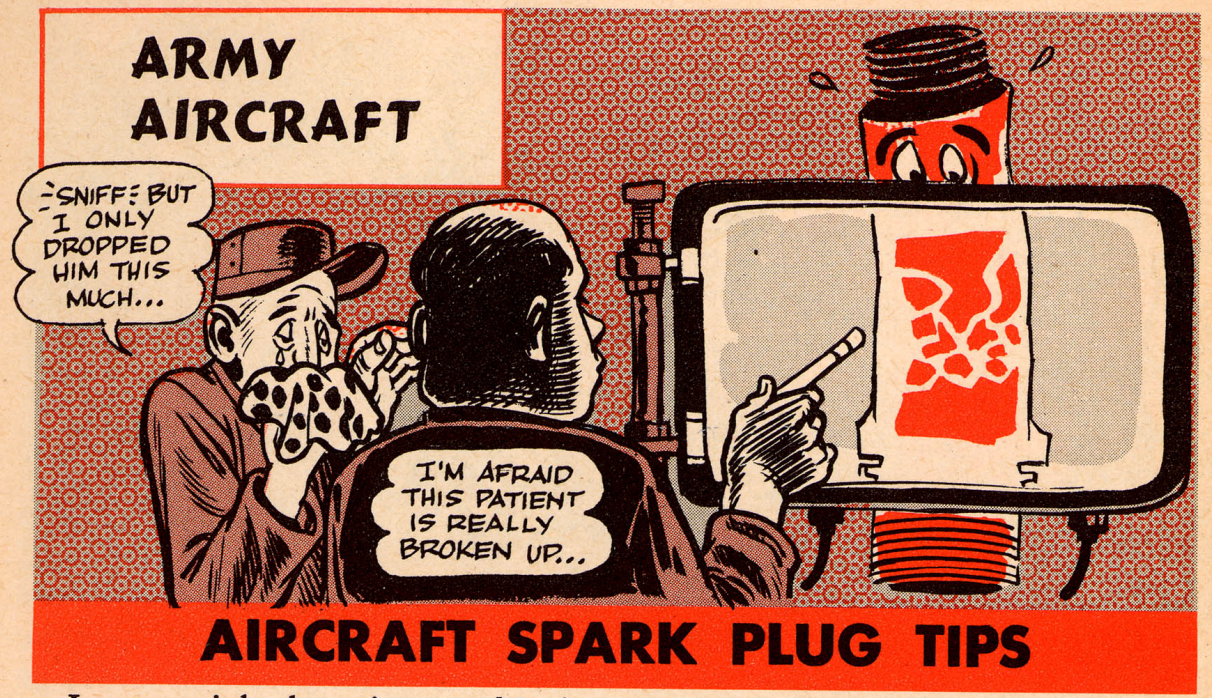
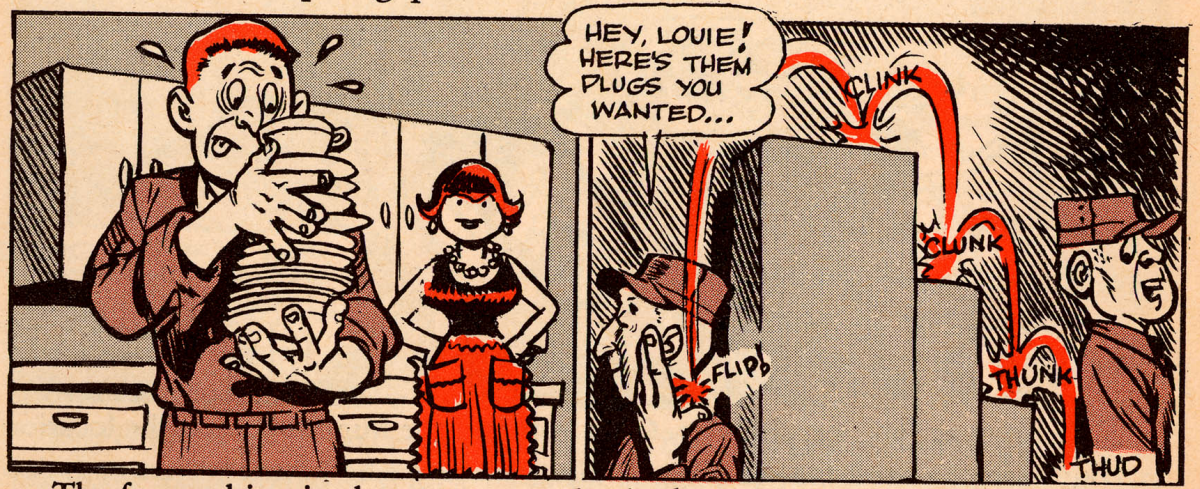


AIRCRAFT SPARK PLUG TIPS

Leave us sit back a minute and look at a spark plug, to see what it is, and how it is made.

Sure, you know that a spark plug is the way you take an insulated wire inside the cylinder of an engine, so that you can shoot a high voltage current through it and make a spark inside the cylinder fire your fuel-air mixture at the right time.

And everybody knows that this is done physically by a threaded metal plug that's screwed into a tapped hole in the cylinder (which may or may not have a bronze or brass bushing in it). And they also know, if you ask 'em, that it's insulated by a ceramic sleeve that keeps the high tension current from getting away until it reaches the spark gap.



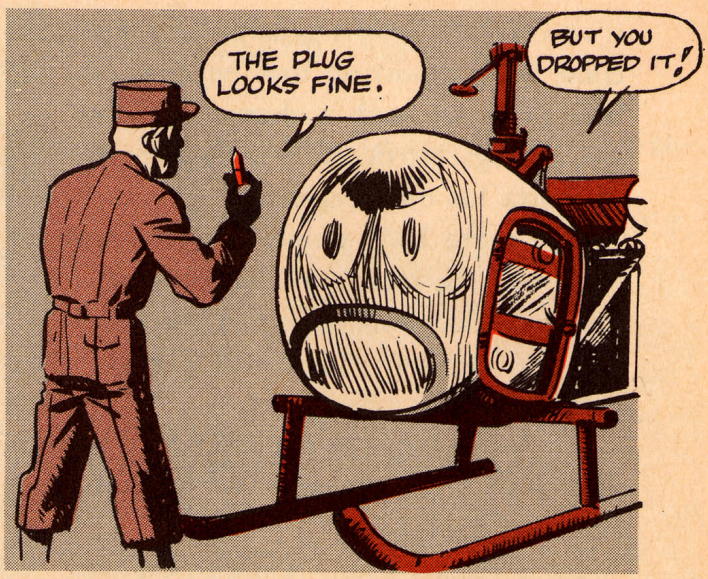
The funny thing is, these same people also know that dishes are made of porcelain (a ceramic first cousin) and they all know how easy it is to break a dish. But, doggone it, some of 'em have a tendency to forget this when they start handling spark plugs.

So the guy who handles his wife's teacups with the greatest care will heave spark plugs around as if they were solid steel.

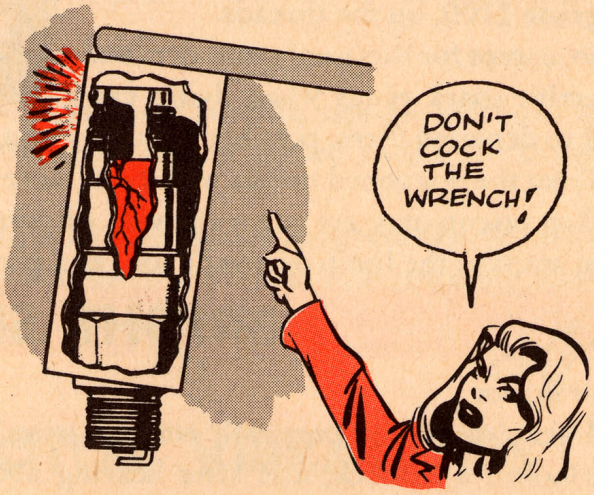
Believe it, this won't fetch it.

Any time a spark plug has been dropped on a floor or other hard surface, never use it in an aircraft, no matter how good it looks.

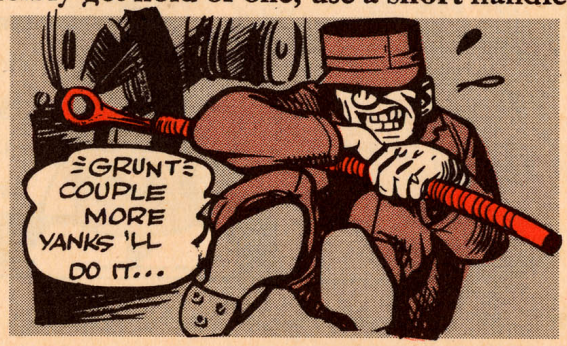
Turn it back in, and be sure it doesn't find its way back into the stock of good plugs.



When installing plugs, remember that ceramic and be very careful not to cock your wrenches or bang the plugs around. If you don't happen to bust the insulation, there's still a fine chance that you'll burr the threads that hold the ignition cable connector onto the outer end of the plug barrel.



Another thing, when installing spark plugs—it's essential that you torque them in with a torque wrench. If you can't possibly get hold of one, use a short handle on your socket and take it easy, then re-torque the plugs with a proper wrench just as soon as you possibly can. The mechanic who chins himself on his 18-in flex handle when he's installin' plugs generally finds that he has a two-piece plug to take out, instead of the one-piece plug he put in.



And that's another thing: Should you happen to have to strongarm a seized or broken plug outta your engine, pull the jug. Don't risk flying the ship until you've installed a new cylinder assembly. Those threads may be OK, but if they're not

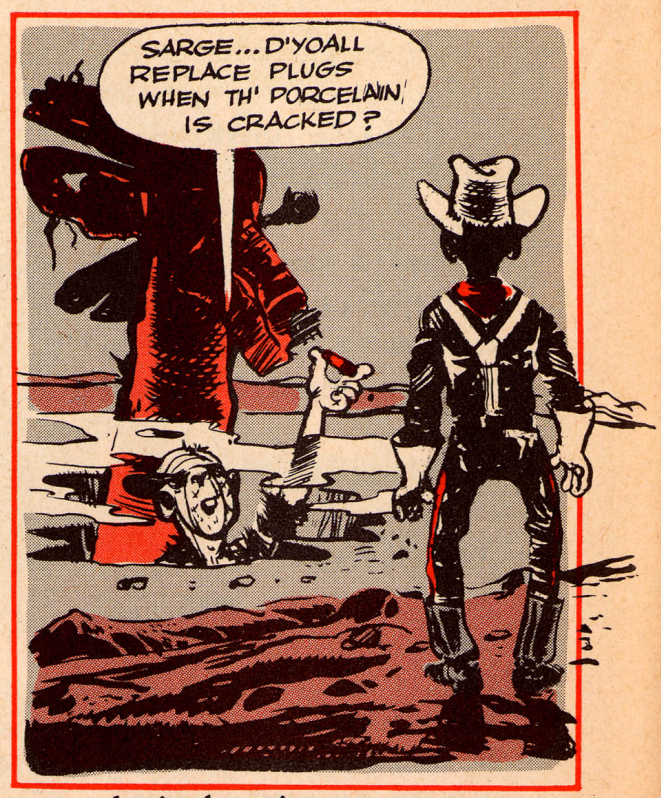
it's most embarrassin' to have your pilot come back reporting that he does not **like** to fly through a shower of loose spark plugs, particularly if they are flyin' outta his own engine.

One more little point: As you may have noticed, there's a little confusion about the use of Anti-Seize Compound (FSN 8030-243-3285) on aircraft spark plugs.

OK, no sweat—use the compound on those cylinders which have brass or bronze bushings.

On engines with stainless steel or heli-coil inserts, use a little oil, SAE 50 or grade 1100, on the threads.

So, except for the usual reminder that defective spark plugs when flying can lead to deceased fliers, possibly including you, that's about it.



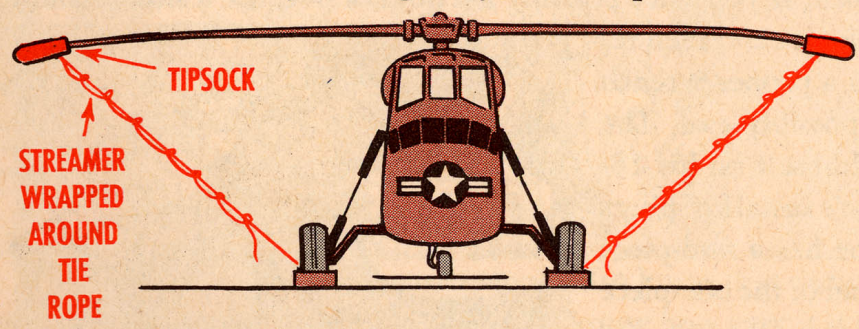
Treat the doggoned things with even more care than the wife's fancy china. A broken teacup may get you a chewin', or even a lump on your knob. A bad spark plug starts at the lump on your knob, and may even get you a mahogany shirt.

BRIGHT SPOTS

Dear Editor,

After a couple of potentially embarrassing near-misses, when someone **almost** overlooked a tip-sock, and after hearing about one of our friends who did try running up a chopper with one blade tied, we've painted all our tip-socks with high visibility paint. Now they stand out like sore thumbs, and we think there's less chance that anyone might try to turn up the rotor with the blades tied.

SFC Arthur B. North
40th Trans Bn AAM
Ft. Eustis, Va.



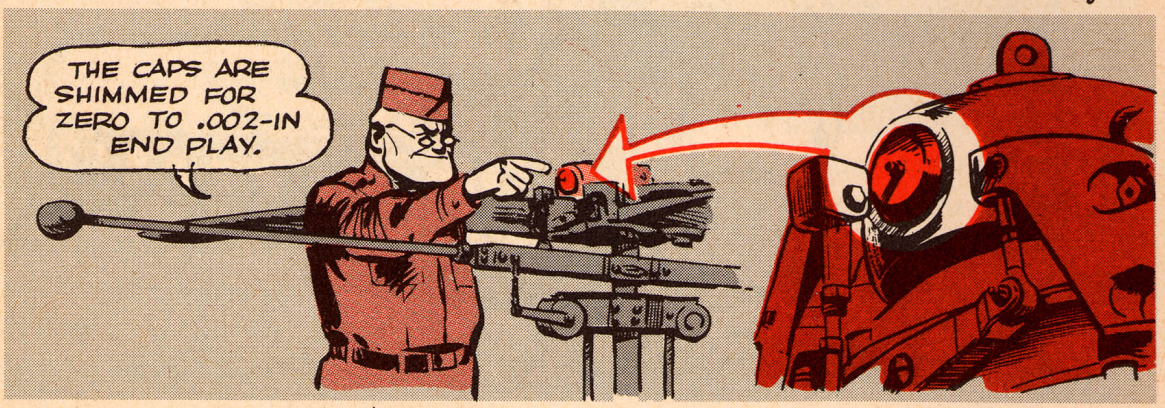
(Ed Note—By all means, if the Old Man agrees...and you could also use reflective tape, or any other bright and noticeable color. You might put high visibility streamers on the tip socks and wrap 'em around the tie ropes like a barber's pole.)

TURNING TRUNNION CAPS?

Dear Half-Mast,

Settle us an argument, please Sarge: Are the trunnion bearing caps on the H-13's supposed to turn, or be tight?

SFC F. J. F.



Dear SFC F. J. F.,

Some do, some don't. The point is, those bearing caps are shimmed for zero to .002-in end play. Consequently, some can be turned with a slight drag, while some are plumb tight.

But you can't rely on twisting as an inspection—you gotta depend on a dial indicator set up on the gimbal ring and the trunnion or mast retaining nut.

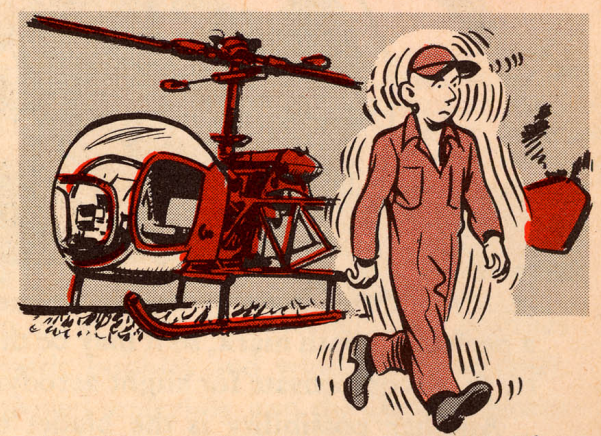
Half-Mast

MAIN ROTOR VIBRATIONS

Dear Half-Mast,

Our rotary wings come back from support with the blades in perfect track and balance. But frequently we start getting vibrations before we've logged many hours, and these generally get progressively worse. What causes this—dirt, or temperature changes? Or what?

SFC J. E. B.



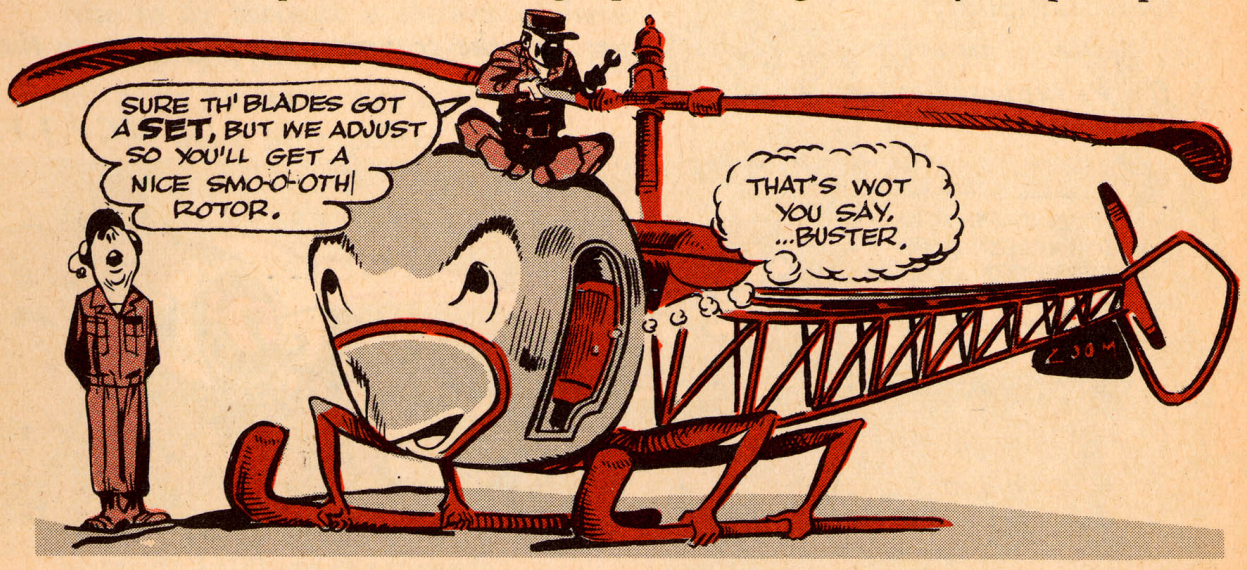
Dear SFC J. E. B.,

Whoa now, that's a shotgun sorta question. Many things can cause rotor vibrations, and you didn't give me much to go on when you didn't tell me what make and model of rotor you're using.

On the wood blade ships, Sioux (H-13) and Raven (H-23's), moisture fre-

quently affects the blades, particularly on aircraft that are not flown regularly.

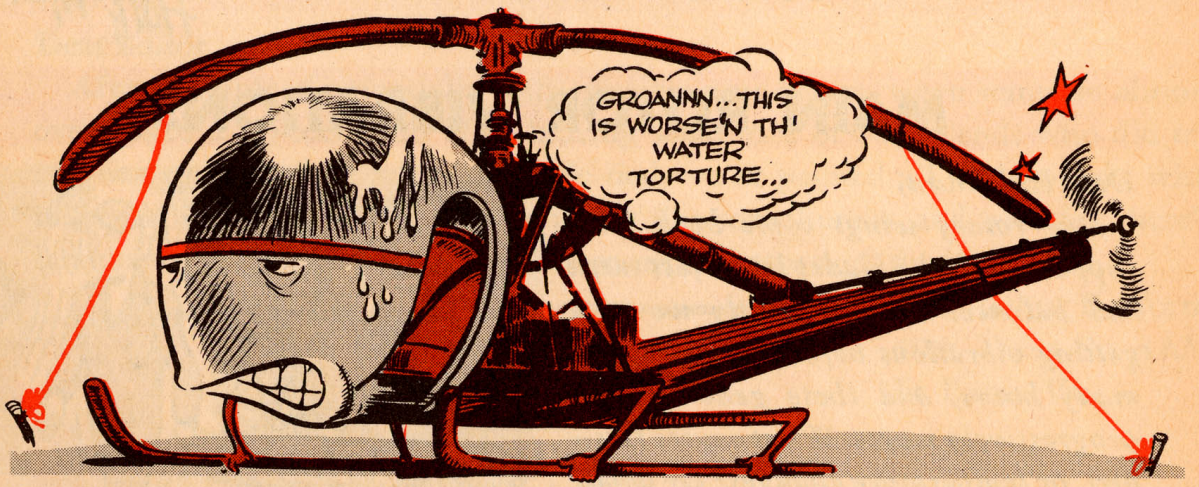
Blades can acquire a "set" during repair or storage, and may also pick up ex-



cess moisture. When they're installed, naturally they are tracked and adjusted to give a smooth rotor.

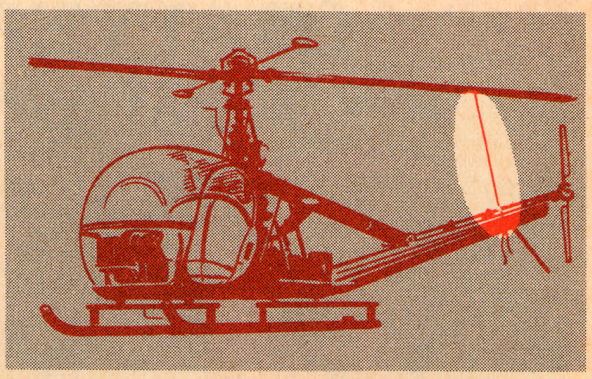
However, after a few hours of flexing in flight they'll lose this set, and perhaps the moisture also, which can set them out of track and give you a vertical vibration, or out of balance, giving you a lateral vibration, maybe both. So your best bet is to retrack the blades when this vibration develops.

Another thing, remember that ground tracking is only the first step; you later retrack if they roughen up again. And your object is a smooth rotor, rather than



a perfect tip path mark, so it may be that you'll have the blades just slightly out of track, to compensate for slight aerodynamic differences in them.

Another possibility is the blades taking a set when installed on the aircraft, frequently due to tying them down too tight. They should be snug, but not tight enough to bend the blade very much. Be particularly careful in wet weather, and allow for shrinkage when the tie-down straps get wet. This applies to any rotor, 2, 3, 4 or 5 bladed.



Also, on two bladed rotors it's wise to tie down alternate blades on alternate days (or after each flight if the ship does not fly daily). You might tie the blue blade on even numbered days and the yellow blade on odd days.

Now, if you're dealing with metal blades, you have no problems from blade set, and temperature won't affect 'em, because all blades expand alike. But there's a chance that careless handling, either when the blades are installed or afterward, could have bent the trailing edge trim tabs of one or more pockets.

This, of course, upsets the aerodynamic trim of the blade, and it may not match its mates. Unfortunately, about the only cure for this is a new whirl test at the factory. So, it's vital that you treat those all-metal blades with care and respect.

So much for the blades themselves.

'Nother thing, any neglect or improper service of the flight controls systems and the dampers can give you vibrations. Also you can get a high freq shake from the tail rotor and its shafting by neglect or improper maintenance.

You've got a long list of things to check. If none of 'em points to your problem, check with your support people. If they can't get you a smooth rotor, they'll get in touch with the project officer at the Transportation Supply and Maintenance Command in St. Louis (TSMC-E), and they'll give him the serial number, model and as much history on your machine as they can. Between 'em, they'll get you a flyable bird..

Half-Mast

PLASTIC POLISHES

There still seems to be some question as to just what cleaners and polishes can safely be used on the transparent plastic bubbles and windows in aircraft.

TM 1-1-1A-12 gives the listing of approved materials, and the Quartermaster stocks 'em. FSN 7930-282-8255 and FSN 7930-376-9036 get you the only two approved types.

Be sure you don't use anything but these approved materials on your plastic. It can't stand any coarse abrasives.

DRY (BATTERY) SUBJECT

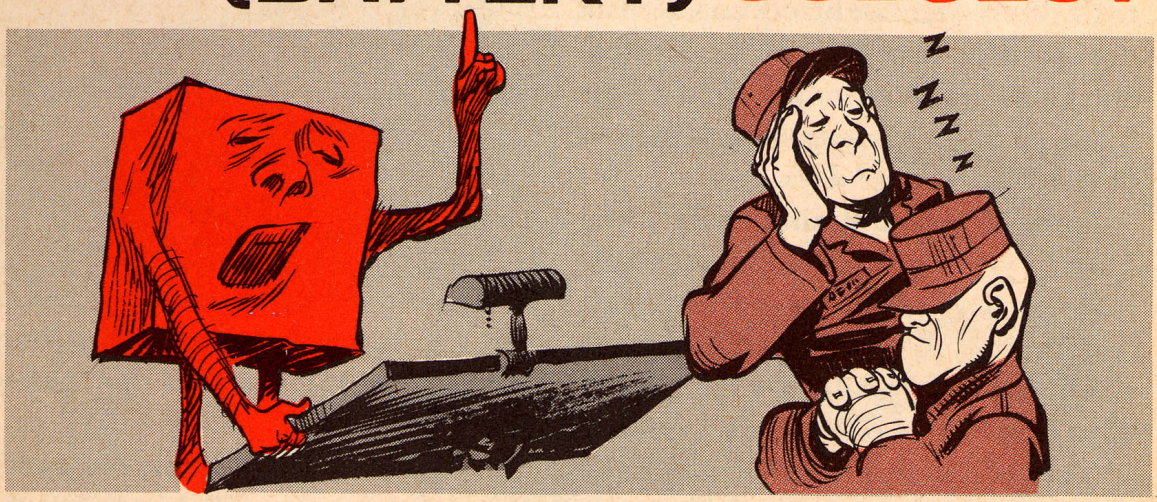
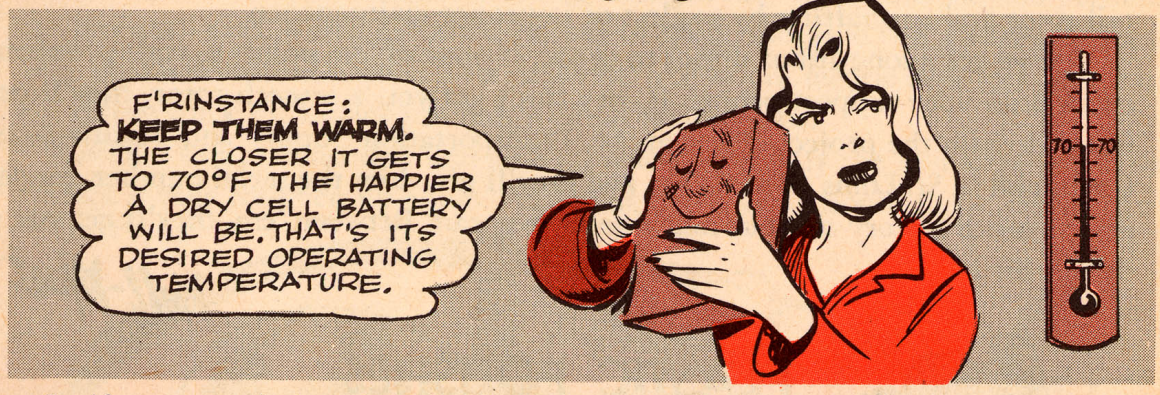


Figure it this way: A dry-cell battery starts losing its charge the minute it leaves the battery factory.

A chemical action sets in that doesn't stop until the battery has shot its volt. But every piece of battery-powered radio and telephone equipment will talk louder and longer if its battery gets a few life-giving lifts.



So if your outfit is using AN/PRC-6's, AN/PRC-8's, 9's, 10's, EE-8's, AN/-PRC-264's—or any portable gear where the mercury is way down low—the batteries are going to need some help.

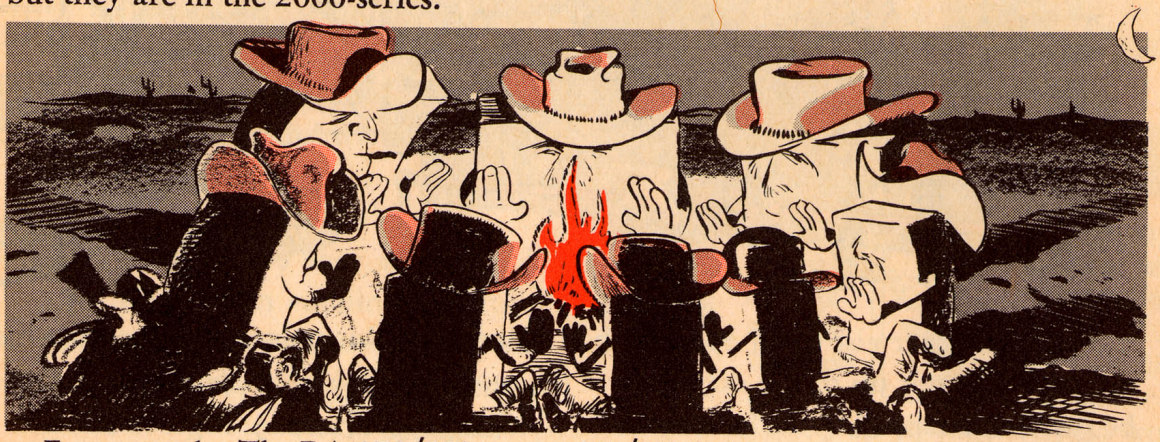
In freezing weather, slip the battery out of the set when it's not in use and keep it warm. That could even mean taking it into the sack with you, till something better comes along.

The only time you put a dry-cell battery in cold storage is when it's going to be on the shelf for many, many moons. Then the idea is to slow down its chemical action as much as possible. But for an over-night storage, keep 'er warm. But not hot.

Never Too Warm. On the other hand, if you're sweatin' your way through the steamy tropics, it's a sure bet the battery is breathin' hard, too. So try to get it "out of the hot sun" and as close to 70 degrees as possible.

Speaking about sub-zero operations, y'might check to see if your telephone or

radio is winterized" as far as battery power is concerned. There's a low-temperature, cold-weather battery for equipment using batteries in the BA-1 through BA-999 series. The cold-weather battery has the same BA number as the regular one, but they are in the 2000-series.

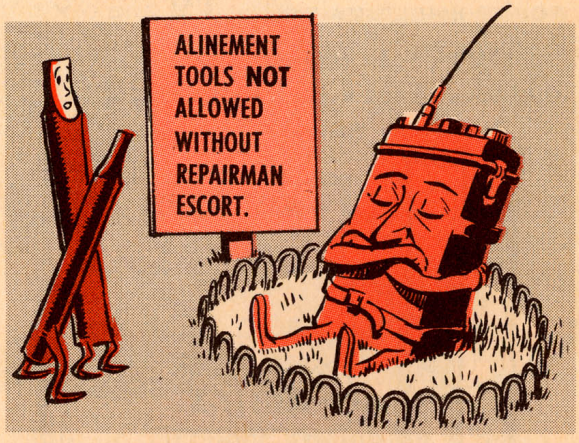


For example: The BA-270/U in your AN/PRC-6 has a cold-weather twin that goes by the name and number of BA-2270/U. That 2270 is identical to the 270 in size, use, and everything else except effective operating temperature and number. The BA-2270/U will put out power down to -40 degrees F. (Another example: The cold weather twin for the BA-30 is the BA-2030.)

And while they're designed for cold weather work, the 2000-series also will give excellent service in above-freezing weather.

Check SIG 5-FSC Group 61, Class 6135 (15 Feb 55) for the name, rank and serial number of all those dry-cell batteries, both cold-weather and regular.

LINED OUT



Best to follow a hands-off policy toward the alinement tools on your AN/PRC-8, 9 and 10. Unless, of course, you're a trained repairman who knows an alinement tool is built for something beside picking teeth.

As a matter of fact, walkie-talkie operators would be better off picking their teeth with one of those alinement tools than anything else.

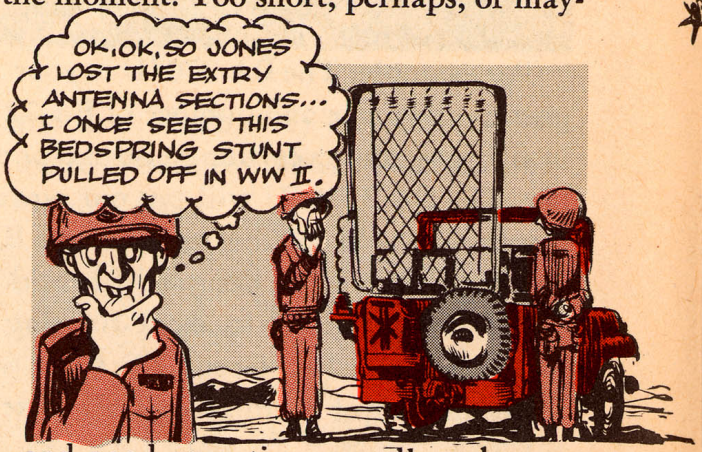
Now sometimes there won't be any such tool on the radio in the first place. The newer models don't have 'em. But many of the earlier sets did come equipped with their own aliners.

As it stands now, the alinement tool is part of the TE-41 Tool Set and should be used only by a repairman who's been trained to line up a set.

REACH!

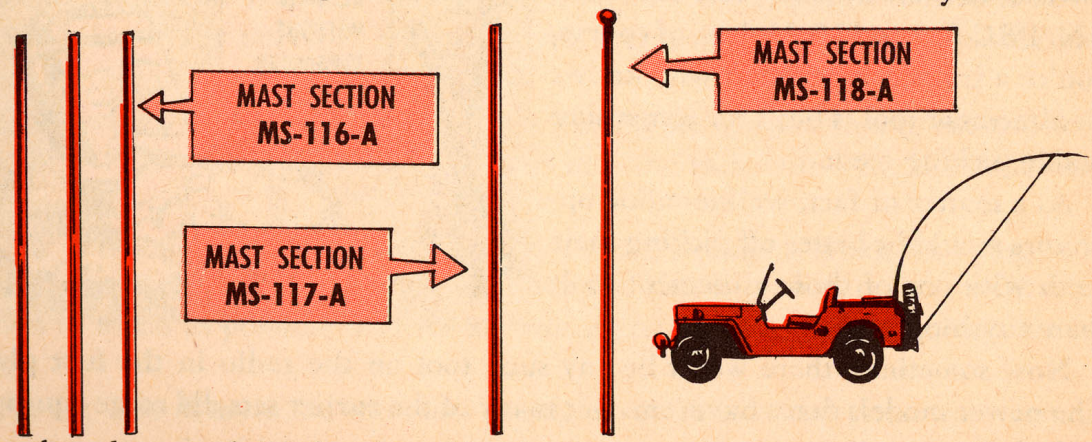
Many an otherwise good operator has failed to get his point across because his antenna was not up to the demands of the moment. Too short, perhaps, or maybe just handicapped by its location.

All of which adds up to the fact that the secret of good transmission and reception lies in a number of factors—a mighty important one being the right use of the right antenna. Trying to get by with less antenna than the situation calls for not only greatly reduces the effectiveness of your equipment, in some cases it can damage it.



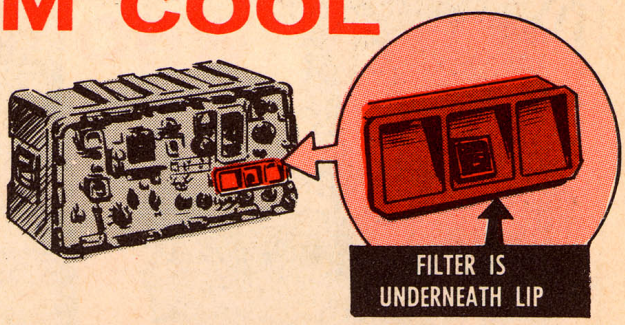
So it's good preventive maintenance—and good operation as well—to be sure your set has a long enough reach. Check the number of mast sections on the set you're using against the TM and operating instructions.

F'rinstance, an AN/GRC-19 has a total of five mast sections: MS-116A (which includes three equal lengths), MS-117-A and MS-118-A. When they're all fitted



together they reach 15 feet into the air. But sometimes you use all of them and sometimes you don't. You have to go to your TM to get the real lowdown. It'll keep you from sending those half-mast signals.

KEEP 'EM COOL



Hear that soft hum comin' from your radio set? It means, of course, there's a blower inside to keep things from gettin' too hot. It also means there's a filter around to keep the air clean.

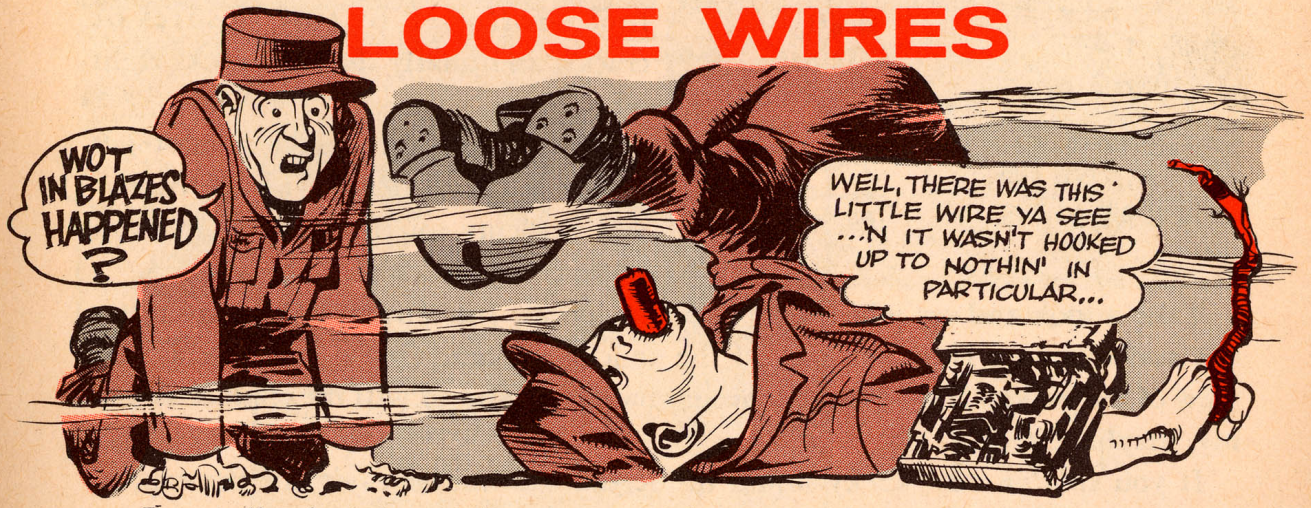
Sometimes it's easy to overlook that filter when running a routine check on an air-cooled set. After all, it's out of sight and doesn't make noise or light up. But if it stops filtering or gets clogged up—things will go from bad to worse in a very few minutes.

So if the filter is clogged and matted and needs a bath, dunk it in some Cleaning Compound, Liquid (Sig), 1 pt can, FSN 7930-395-9542, and slosh it around till the mesh shows bright and clean.

Let the assembly dry overnight and then dip it in some oil. OE 30 oil is plenty good enough. After a short period of draining it'll be ready to slip back into the set.

Those filters can use a PM check every time the set goes into action, just like any other "pluck out" item.

LOOSE WIRES



Best policy for a loose wire on your radio or telephone assemblies is to leave it that way. Loose, that is.

If there's the slightest bit of doubt as to where it goes, never hook it up yourself. The right wire on the wrong contact point can foul up everybody's signal.

Next time a wire waves at you from a phone or radio, wave the whole works right back to your repairman. Or wave him up to it.

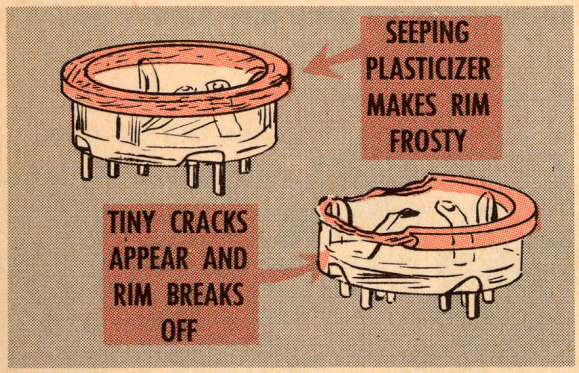
Crack . . . crunch . . . scrape.

Maybe you phone users can't hear it, but things have been happening inside some of those H-60/PT Handsets. The ones that come with the TA-43/PT and TA-312/PT telephone sets.

There's much too tight a grip between the contact assembly and the microphone elements on some of them. And the contact assembly has been coming off second best and ending up cracked, crunched and scraped.

The reason? The rubber gasket there contains a liquid called a plasticizer. Which is a fancy name for a liquid that keeps the rubber from drying out and cracking in Arctic-type weather. Fine.

The trouble is that some of this plasticizer seeps into the rim of the plastic cup. That does two things: causes the plastic to swell a little, and also robs it of some of its strength.



This seeping of the plasticizer into the rim soon gives the plastic a frosty look—followed by tiny fissures or cracks, and finally the rim cracks right off.

Now, a silicone gasket doesn't get brittle. It's made out of synthetic rubber and is plenty tough and flexible, even without a plasticizer.

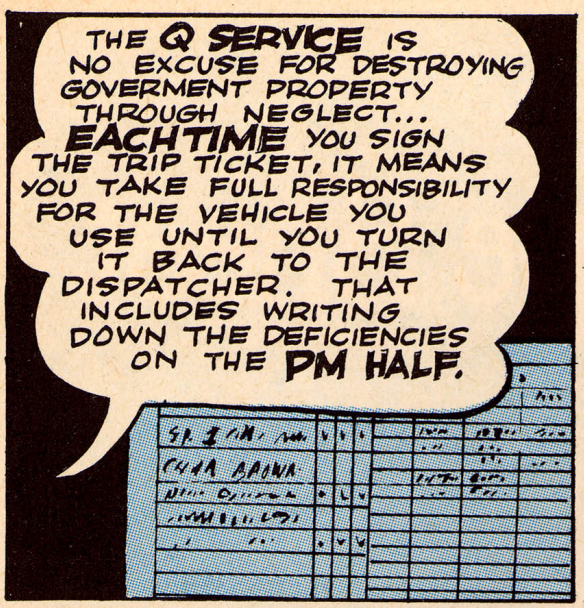
Take a look and see which one your phone has. Just unscrew the transmitter cap and retaining ring, and slip off the de-icing screen. That'll give you a clear view of the gasket. If it's black—it needs changing. And so will the contact assembly, maybe. Check it, too.

If you spot an oily, sticky liquid inside the transmitter cavity or the cap, or even on the transmitter button or contact assembly itself, don't sweat. Just wipe it off. Of course, if the gasket is gray, you're in good shape. Close up everything and carry on.

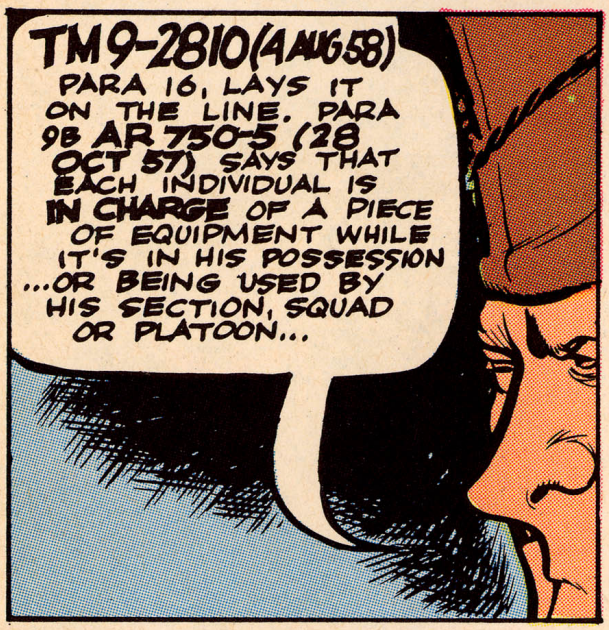
If you need a gray gasket, ask for: Silicone Rubber Gasket, FSN 5805-620-1010. If you need an assembly, ask for: Contact Assembly, electrical; FSN 5805-392-7937.

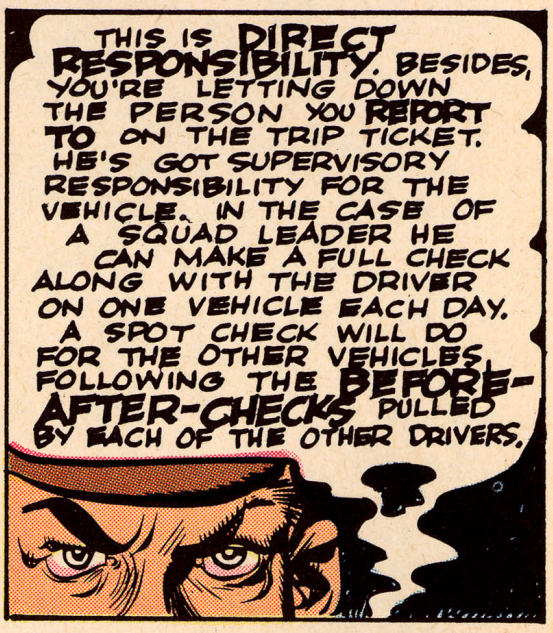
JOE'S DOPE
IT'S YOUR BABY
Camp Paper
OPERATION CORNPONE IS NOW IN 5th DAY, FORT McKORNBALL TAKEN IN A SWEEPING ACTION
G.I. PAY UNDER
NCO DANCE CANCELLED
ALL TROOPS ALERTED AREA COMMANDER CANCELS ALL LEAVES
WE'VE BEEN SCOUTIN' OUT HERE FOR FIVE DAYS... NOW, SIR... YES SIR... VERY WELL SIR!! EASY RED SIX OUT!
O#*6
CP SAYS WE SHOULD RETURN TO THE OUTFIT AND REPORT... SEEMS THEY NEED WHAT INFO WE GOT TO PLAN A NEW MOVE.
TELL EM' OUR JEEP GIVE OUT.
I was at the Service Club with my girl... when the call came in
I DIG YOU TH' MOST!
PIANISSIMO DOLL... LET'S KEEP IT GAY.
HEY, PISTOL, YOU'RE WANTED OUT IN THE AREA! QUICK!!
THE MIGRAINE COMPANY
MAKER OF COOKS' & BAKERS' HEADACHE POWDERS
Presents
PETER PISTOL
SGT. "MAINTENANCE EYE" FROM WAY OUT IN OUTVILLE.
After a while...
...SO, WHEN I GOT THE CALL TO COME IN AND TOLD THE DRIVER TO... WELL LOOK AT THE JEEP.
MAN.. DIG THAT CRAZY PARTS PILE!

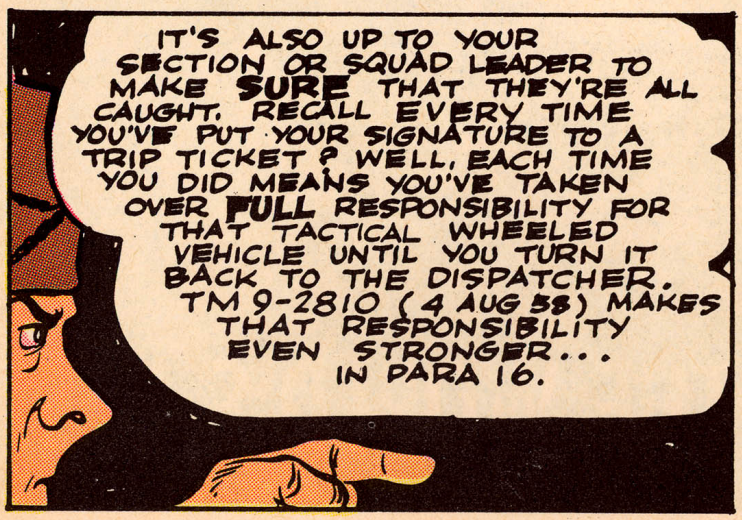
WHERE'S THE DRIVER AND HIS DD FORM 110?
HERE, PETE... I KEEP IT NICE AND CLEAN.
CLEAN? MAN YOU'RE FROM OUTVILLE... THIS FORM SHOULD HAVE A LIST OF DEFICIENCIES LONGER THAN AN OBOE PLAYER'S HAIR.
I HEAR YOU TALKIN'... BUT YOU DON'T COME THRU... I BEEN DRIVIN' THAT JEEPERINO TWO MONTHS NOW... IT GOES MAN, ER... I MEAN... IT WENT.
YOU HEARD RATTLES?
YEP!
YOU HEARD SQUEAKS?
YEP!
YOU HAD OIL LEAKS? LOOSE BOLTS? MISSING ENGINE?
WOT I MEAN!
THOSE, MAN, THOSE DEFICIENCIES ARE TO BE REPORTED ON DD FORM 110! AND IF YOU CAN'T CORRECT THEM ON THE SPOT, MARK A CWF AFTER THEM... THAT MEANS DELAYED MAINTENANCE FOR THE CURRENT WORK FILE (DA FORM 2147).
WOT FOR!? IT'S EASIER TO WAIT FOR THE "Q" SERVICE!


THE Q SERVICE IS NO EXCUSE FOR DESTROYING GOVERMENT PROPERTY THROUGH NEGLECT... EACHTIME YOU SIGN THE TRIP TICKET, IT MEANS YOU TAKE FULL RESPONSIBILITY FOR THE VEHICLE YOU USE UNTIL YOU TURN IT BACK TO THE DISPATCHER. THAT INCLUDES WRITING DOWN THE DEFICIENCIES ON THE PM HALF.

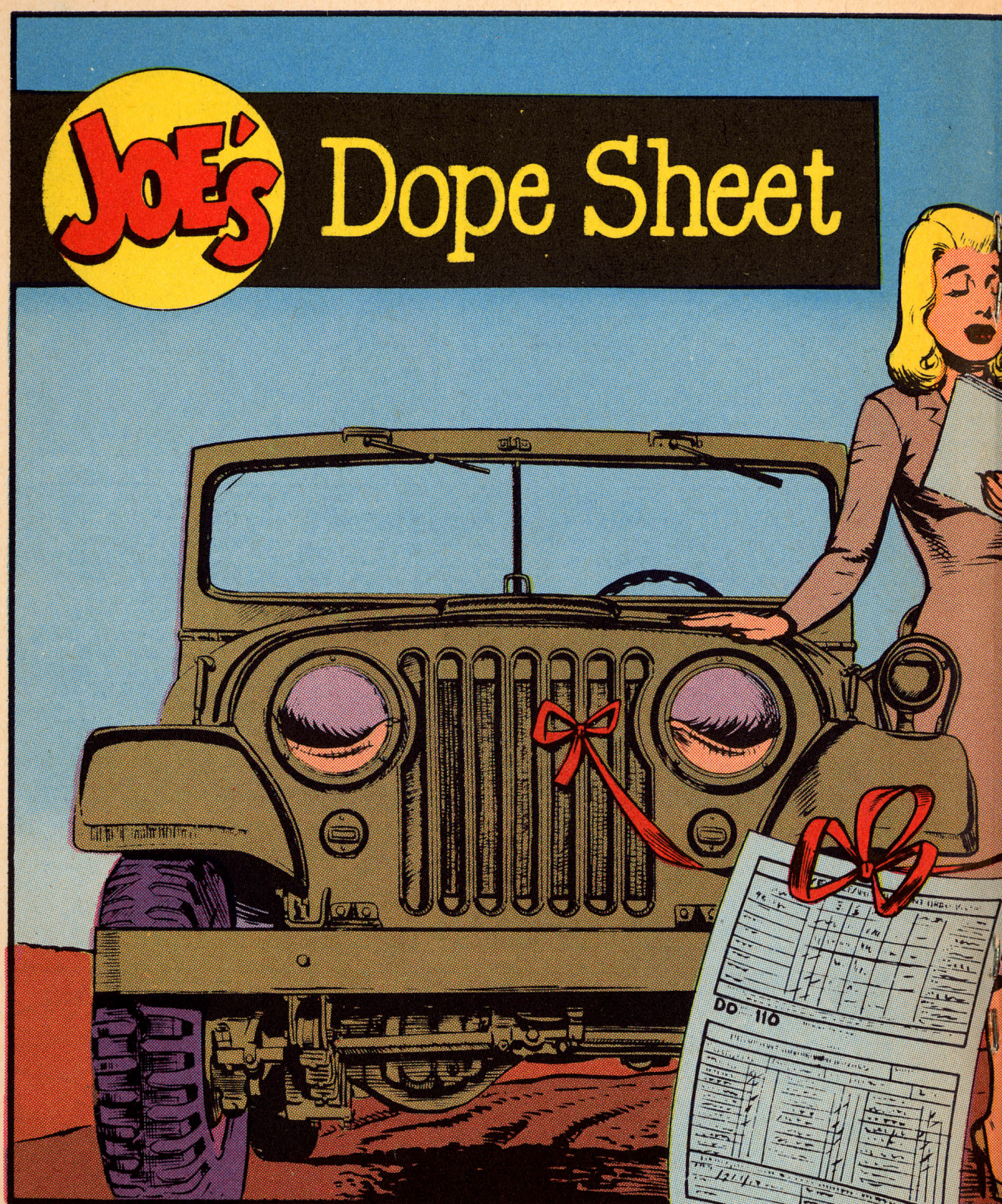
YOU CAN'T PIN THAT RAP ON ME! WHO SAYS I'VE GOT THIS RESPONSIBILITY ?


TM 9-2810 (4 AUG 58) PARA 16, LAYS IT ON THE LINE. PARA 9B AR 750-5 (28 OCT 57) SAYS THAT EACH INDIVIDUAL IS IN CHARGE OF A PIECE OF EQUIPMENT WHILE IT'S IN HIS POSSESSION ...OR BEING USED BY HIS SECTION, SQUAD OR PLATOON...


THIS IS DIRECT RESPONSIBILITY. BESIDES, YOU'RE LETTING DOWN THE PERSON YOU REPORT TO ON THE TRIP TICKET. HE'S GOT SUPERVISORY RESPONSIBILITY FOR THE VEHICLE. IN THE CASE OF A SQUAD LEADER HE CAN MAKE A FULL CHECK ALONG WITH THE DRIVER ON ONE VEHICLE EACH DAY. A SPOT CHECK WILL DO FOR THE OTHER VEHICLES FOLLOWING THE BEFORE-AFTER-CHECKS PULLED BY EACH OF THE OTHER DRIVERS.


IT'S ALSO UP TO YOUR SECTION OR SQUAD LEADER TO MAKE SURE THAT THEY'RE ALL CAUGHT. RECALL EVERY TIME YOU'VE PUT YOUR SIGNATURE TO A TRIP TICKET? WELL, EACH TIME YOU DID MEANS YOU'VE TAKEN OVER FULL RESPONSIBILITY FOR THAT TACTICAL WHEELED VEHICLE UNTIL YOU TURN IT BACK TO THE DISPATCHER. TM 9-2810 (4 AUG 58) MAKES THAT RESPONSIBILITY EVEN STRONGER... IN PARA 16.

...AND WHILE WE'RE AT IT, HERE'S A PINUP THAT CLINCHES IT...


JOE'S
Dope Sheet
DD 110
WE HAVE THE WORLD'S BEST

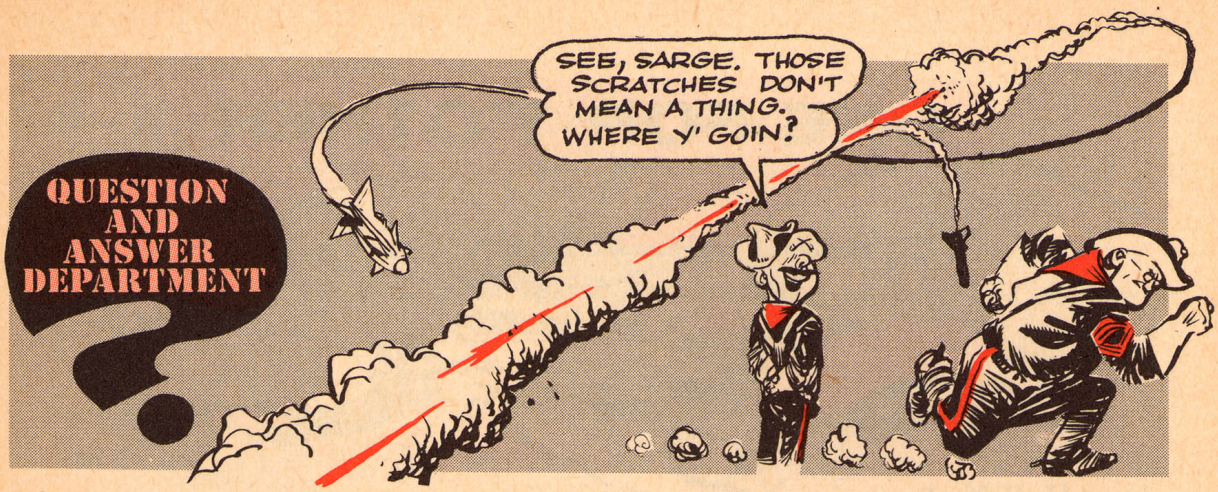
JOE'S Dope Sheet
I Pronounce thee man and machine,
By order of para 16.
Its care is all thine;
From here till "Q" time,
She's tactically yours in between.
DD 110
WE HAVE THE WORLD'S BEST EQUIPMENT ... Take care of it

I Pronounce thee man and machine,
By order of para 16.
Its care is all thine;
From here till "Q" time,
She's tactically yours in between.
UIPMENT . . . Take care of it

HEY PETE! JUST MOVED Y'R JEEP AND THE ENGINE SOUNDS KINDA FUNNY. DID Y' LIST IT ON Y'R TRIP TICKET YET?
GET LOST! WILL YA? CAN'T YOU SEE I'M ON AN IMPORTANT DEAL?
BUT PETE... Y'BETTER DIG THAT ENGINE NOISE... THAT'S IMPORTANT, TOO!
LOOK, BUSTER! THAT'S A MECHANIC'S HEADACHE. I'M TOO BUSY NOW TO MESS WITH THAT JAZZ!
BUT PETE! YOU JUST CHEWED THAT DRIVER ON THAT RESPONSIBILITY STUFF...
THAT WAS FOR HIM... I PULL MY BEFORE, DURING 'N AFTER CHECKS, AND I ALWAYS HAVE A CLEAN TICKET- AND I LIKE IT THAT WAY!
TO CONTINUE...THIS IS A CLEAR CASE OF NOT LISTING ANY MINOR DEFICIENCIES ON THE TRIP TICKET...RESULTING IN...
NOTHING BEING RECORDED ON THE CURRENT WORK FILE. SEE! THE VEHICLE IN QUESTION WAS NEVER LISTED FOR ANY REPAIRS— BIG OR SMALL!

BUT PETE! THAT'S X-ACTLY WOT I WAS GONNA TELL YOU ABOUT YOUR JEEP!
WHAT, YOU AGAIN?
Y'R MAKIN' A MOUNTAIN OUTA A MOLE HILL! THE ONLY THING WRONG HERE IS... YOU GOT A CASE OF OVER ACTIVATED HEARING. 'N THAT'S BEING TAKEN CARE OF RIGHT NOW!
NOW...BACK TO MY MISSION...LESSEE WHERE WAS I...
BUT PETE...Y'R TRANSMISSION IS LEAKIN...
SO WOT...IT'LL RUN. BESIDES THE NEXT DRIVER CAN MARK IT DOWN, CAN'T HE?
BUT MAN! THAT'S A MAJOR DEFICIENCY, AND IT SHOULD BE DEADLINED, BUT QUICK!! WE CAN'T WAIT TILL THE NEXT Q...THE TRANSMISSION WILL BURN OUT BEFORE THEN.
AND SO, THE MAINTENANCE NCO NEVER GOT WIND OF ANY DELAYED MAINTENANCE ON THE CWF. COMES THE Q SERVICE, AND IT ALL WENT UNNOTICED. THAT PUTS HIM IN A TIGHT SPOT WITH NO CWF TO GO BY.

SO FINALLY WHEN TH' BIG MANEUVER CAME, A SUPPOSEDLY SOUND VEHICLE WAS COMMITTED AND...
THIS IS THE RESULT... SICKENING, AIN'T IT? WELL, I GOTTA GO NOW.
On the way back to camp.
SAY, PETE, I'M TELLING YOU AGAIN - Y'R REAR END IS LOOSE, 'N ALL THE THINGS Y' DIDN'T REPORT ON THE TRIP TICKET ARE ACTIN' UP!
SO WOT! LET THE NEXT DRIVER REPORT IT, I'M NO PENCIL PUSHER!
CLUNK
CLUNK
CLUNK
CLUNK
CRUNCH
YOU PETER PISTOL?
WOT'S THE PITCH?
FRANK FRIDAY'S THE NAME... I'M INVESTIGATING YOUR JEEP'S SUDDEN COLLAPSE.
I'M TRYING TO FIND OUT WHY ALL THESE DEFICIENCIES DON'T SHOW UP ON THE TRIP TICKETS!
STATEMENT OF CHARGES



THE HOLE STORY

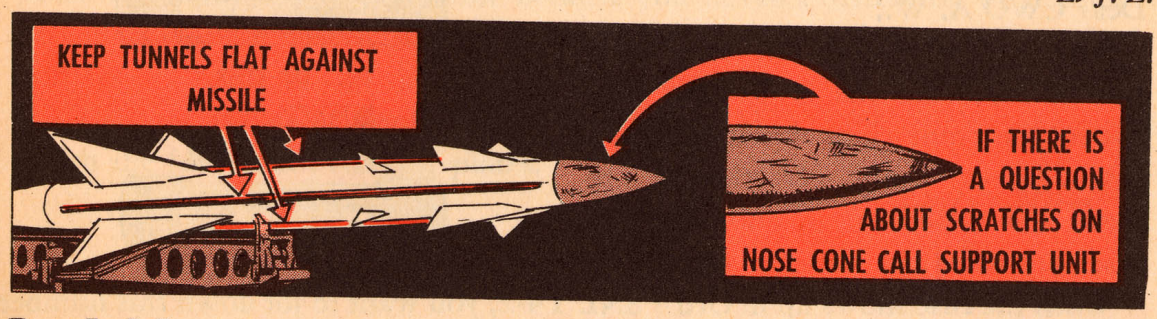
Dear Half-Mast,

I have two questions for you.

First, why all the fuss about keeping the tunnels flat against the Nike-Ajax missile when the tunnels have holes for fueling and defueling?

And why does the inspector give us a hard time about scratches on the nose cone of the missile? After all, the nose tip is made with four holes so you can snap on the ram pressure and transporting closure assemblies.

Lt J. L.



Dear Lt J. L.,

The same answer will hold up for both of your questions.

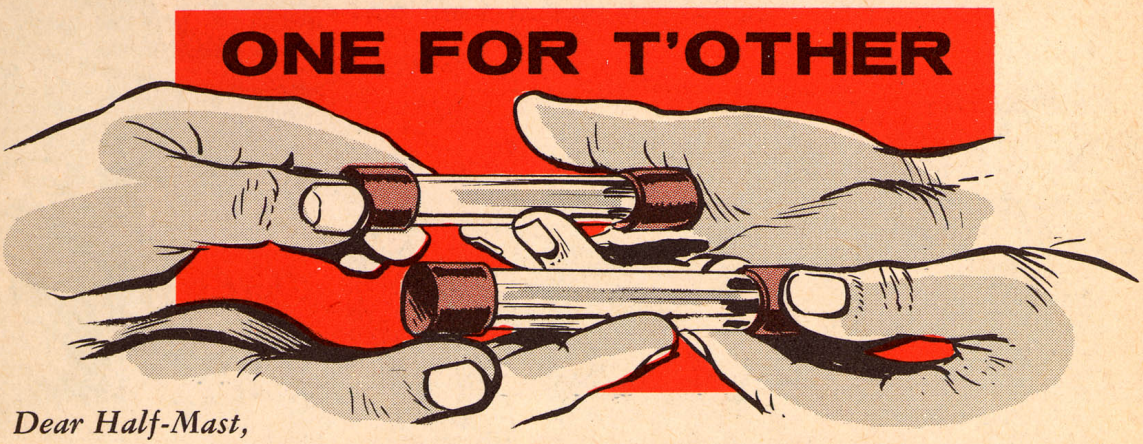
The slide rule boys figured in the holes in the tunnels and nose tip when they designed the missile. They wanted to come up with a missile that'd do certain things so they gave a little here and took a little there.

There's no arguing about how important it is to keep the tunnels flat against the missile. But there are two stories on the nose cone scratches. Some people say that even the smallest of scratches can foul up the air stream enough to cause stresses and strains that could tear the missile apart. Then there are others who'll tell you that little scratches can cause some drag—but not enough to make any kind of difference.

The best bet is to let your support unit have a look at nose cone scratches when you get to the point where you have to decide whether the nose cone stays on the missile or is removed.

Half-Mast

ONE FOR T'OTHER



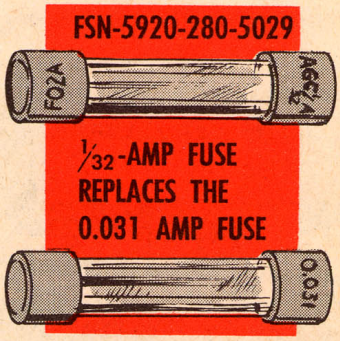
Dear Half-Mast,

As you know, there's an interconnecting junction box in the Nike-Ajax BC van that's tied in with the battery terminal equipment. Four fuses are used in the box and there are three spares. According to the scoop on the cover of the box, we're supposed to use 0.031-amp fuses.

We can't find these fuses in any supply manuals so we've been using the 1/32-amp fuses that're spares for the battery terminal equipment.

Are we right or wrong?

CWO A.W.



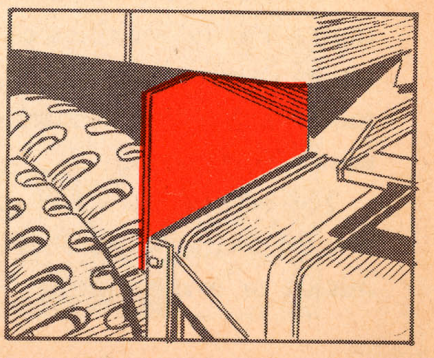
Dear CWO A. W.,

You're dead right. The 1/32-amp fuse is replacing the 0.031-amp job. When you come right down to it, it's just a case of using a fraction in one place and a decimal in another. The fuses are rated the same in amps.

Until the fuse shows up in Ord 7 SNL Y4-2, you want to jot down this number —FSN 5920-280-5029. The fuse comes from Signal.

Half-Mast

SPLASH GUARD



Dear Half-Mast,

Here's a drawing of a splash guard we have been making up for our five-tons, particularly our M51 dump trucks, to prevent mud and dirt from piling up on our fuel tanks. As you know, the dumpers have to work in some pretty sloppy going. In fact, many times the sloppier the going is, the greater

the need for dump trucks to work in there and improve it.

But we're not convinced that a foot or so of mud piled up on top of our gas tank helps things any.

So we've welded a piece of sheet metal to the tank bracket, and trimmed it to fit closely under the bed, when the bed is down. Simple, and no mud on or in the tanks.

SFC A. M.

Dear SFC A. M.,

We like your results, but not your method. Welding that close to any fuel tank is begging for trouble, no matter what safety precautions you take. (Unless, of course, you took the tank clear off the vehicle.) And the other thing is that welding or drilling on a military vehicle can only be called "modifying" it and that's out unless there has been a modification work order published telling you to do it.

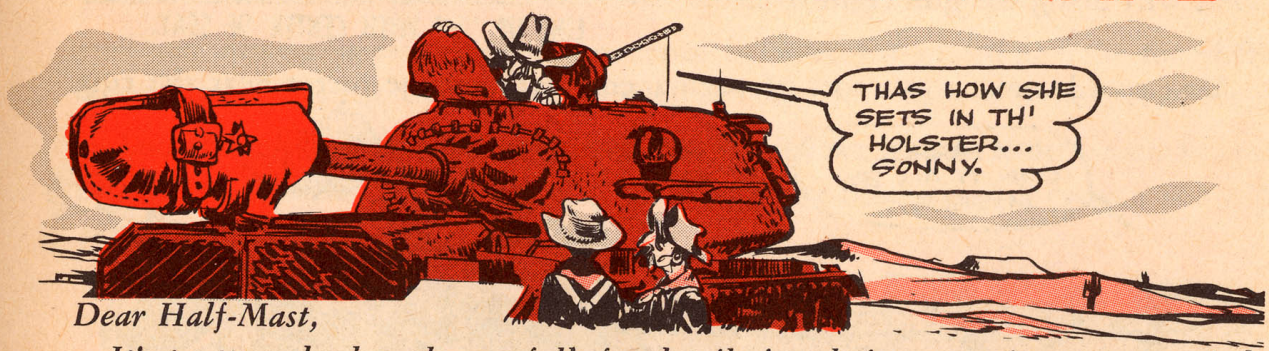
But look, Sarge, you can get the same results by drilling holes in your splash guard and making some "L" shaped clamps which will grab that tank bracket plenty hard enough to keep your guard in place.

Then everybody's happy. You have your mud stopper, and your tanks are clean. Nobody has a complaint because you haven't drilled or welded on the trucks, and any time an inspector might object to your guards, you can take 'em off in five minutes and the truck is just exactly as she was issued.

This condition exists only on early production M51 dump trucks not equipped with the fuel tank protector plates.

Half-Mast

THE LONESOME GUN HAND



Dear Half-Mast,

It's pretty sad when the axe falls for details just before a maintenance period. As a tank commander I usually wind up all by my lonesome at the motor pool.

I get pretty weary running from the gunner's seat to the TC notch to see if the gun is going into the travel lock. What's to be done?

SFC A. A. N.

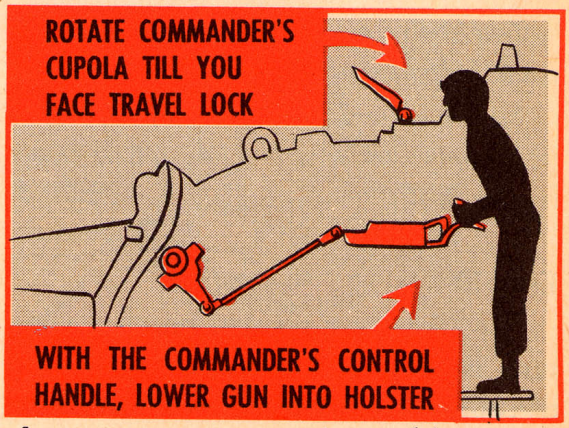
Dear Sergeant A. A. N.,

Getting the 90-mm gun on your M48-series tank over the travel gun lock by

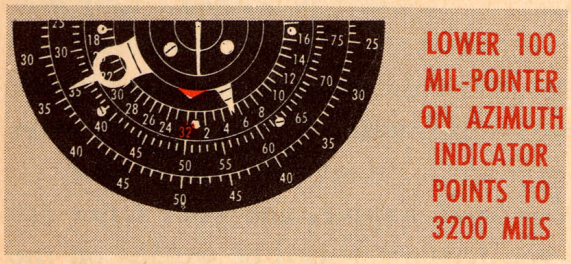
yourself isn't too hot an idea—'cause somebody's bridgework or another vehicle may be close by.

But if an emergency comes up—such as when there's a big flap—the best way to get the gun over the travel lock is from the tank commander's spot.

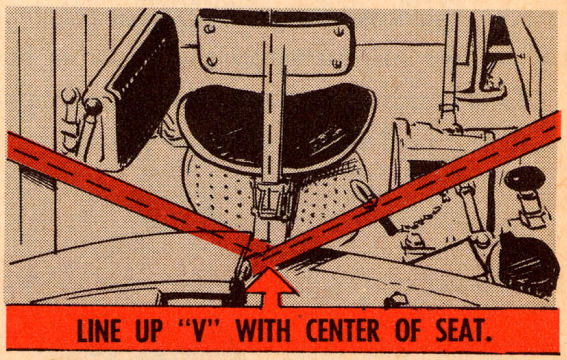
Open the commander's cupola and rotate it so you're facing the travel lock. Then, just latch on to the commander's control handle and you're in business. Not only can you turn the turret, but you can lower the gun into the holster—and see every move you're making.



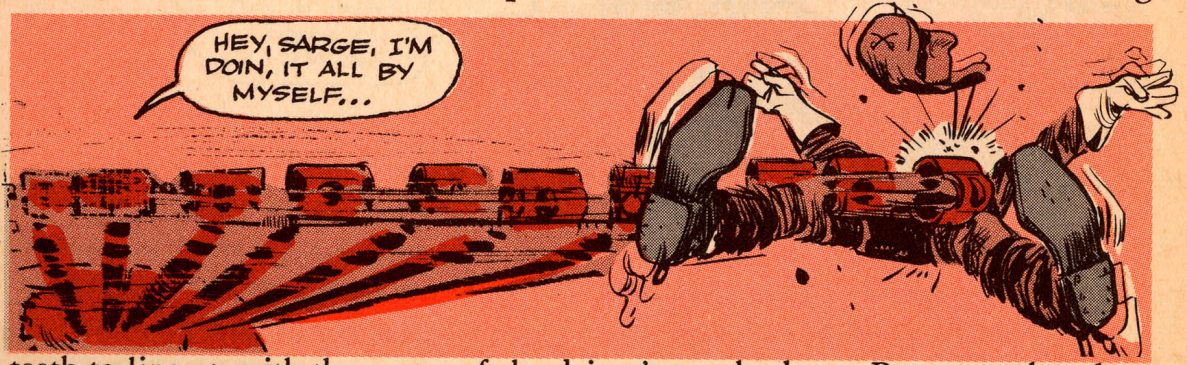
Another way of playing blind man's buff with the gun without running around like a chicken without a head is from the gunner's seat. Just watch the lower 100-mil pointer on your azimuth indicator until the turret comes 'round to 3200 mils. Then, you're right over the gun lock—and you've got nothing to set and nothing to forget.



Or still working from the gunner's seat, you lean out a-ways and twirl the turret so that the "V" formed by the turret floor support braces line up with the center of the driver's seat backrest. That will bring the gun right over the lock.

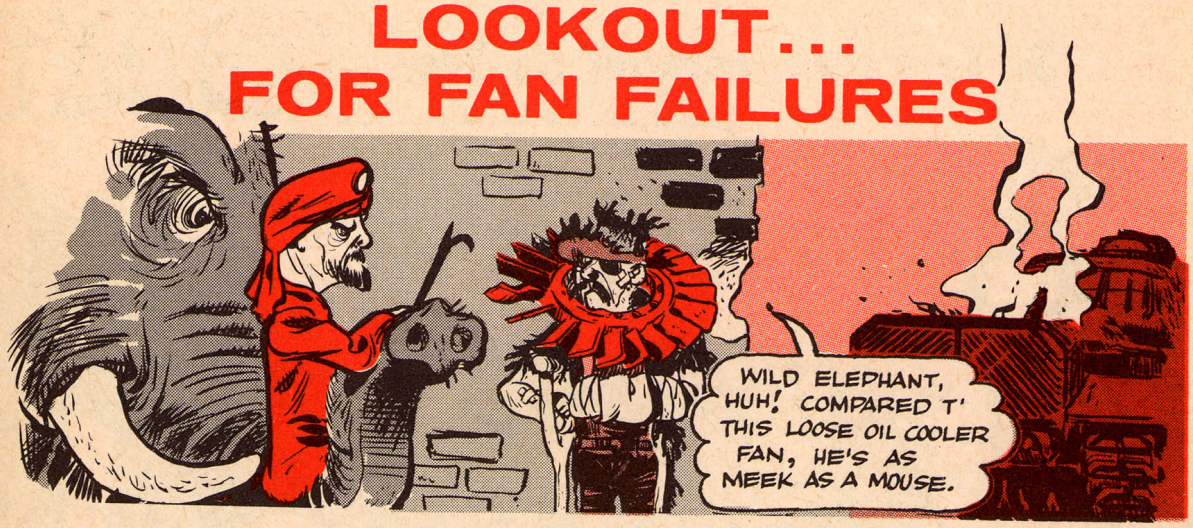


You could make some sort of permanent mark on the turret near the ring teeth to line up with the center of the driver's seat backrest. But remember these are methods to be used in emergencies only—otherwise your moving gun might twist somebody up to look like a pretzel.



Half-Mast

LOOKOUT... FOR FAN FAILURES



Keep a hawkeye on the oil cooler fans of your M48A2-series medium tanks and M51 heavy recovery vehicles to keep 'em from conking out. If they do get loose, the fans will act like elephants on the rampage—they'll tear up everything in sight.

Seems that the fan rotor, FSN 2930-294-0255 can develop metal fatigue and come apart on you after a while. So until a better one comes along . . . here's what you and your mechanics can do to stop a busting-up time from happening to your tank.

1. Look at the rotor base hub near the bolts . . . there shouldn't be even the smallest cracks.

2. Check the fan for movement or rocking . . . the mounting bolts holding the fan tower to the crankcase must be tight.

3. The fan blades must not hit the guides . . . look for tell-tale marks on the outer edge of the fan blades.

4. There should be at least ¼-in clearance between the guard and the fan rotor and a minimum of .070 clearance between the fan rotor blade and the shroud ring.

5. Look for any crack, bend or chip on the fan itself . . . these'll throw the fan off its delicate balance. For instance, a 1-oz chip off the blade tip will cause a 50 to 75 pound overload at the bearings.

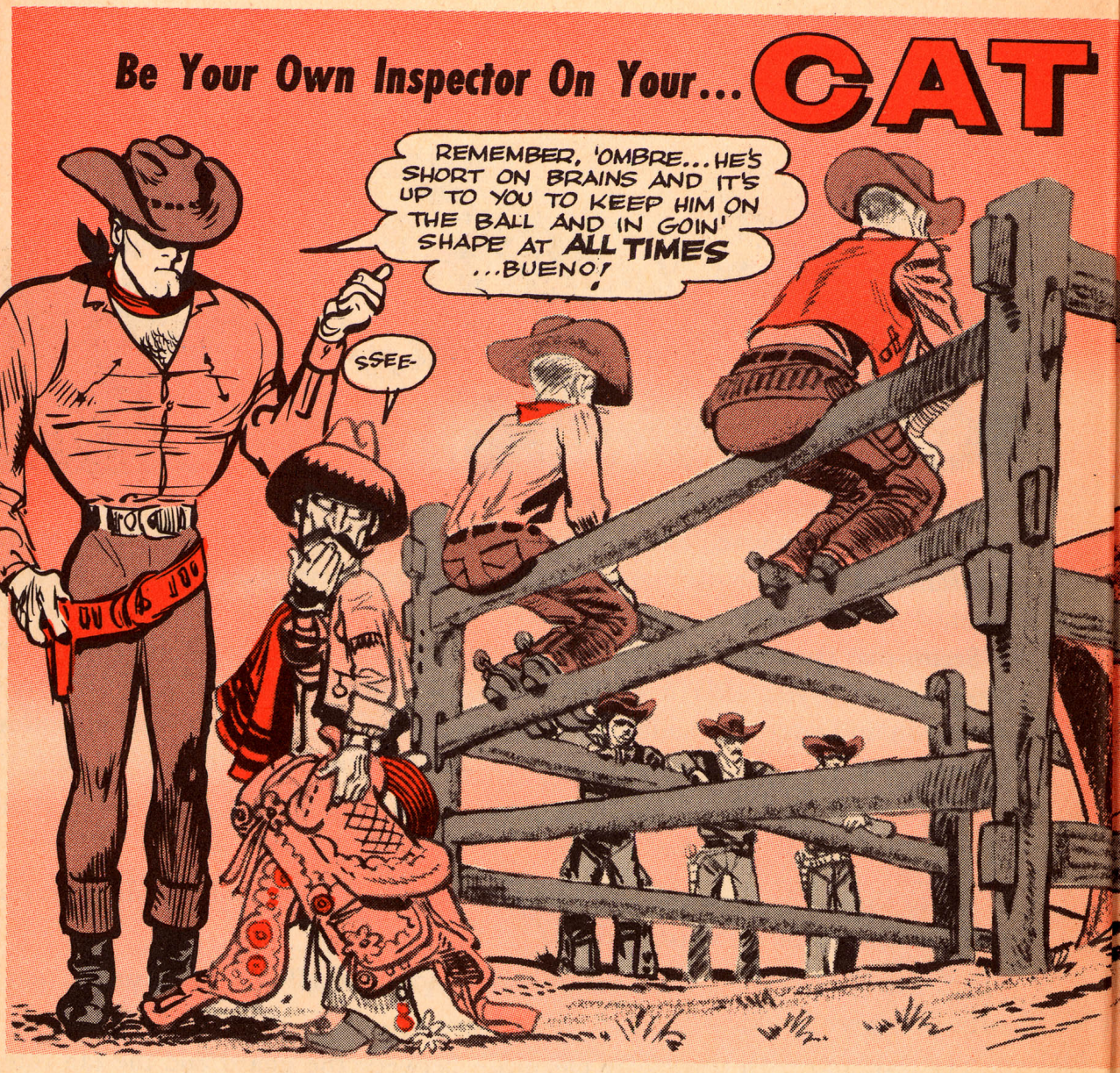
These are the tell-tale signs that mean trouble. When you run across 'em, call your support unit so they can set things right.

Don't take chances—eyeball those oil cooling fans whenever you get the opportunity.

In the meantime, **never:**

Use the cooling fan guard as a walkway or foot scraper.

Try to fix bent blades in the field.

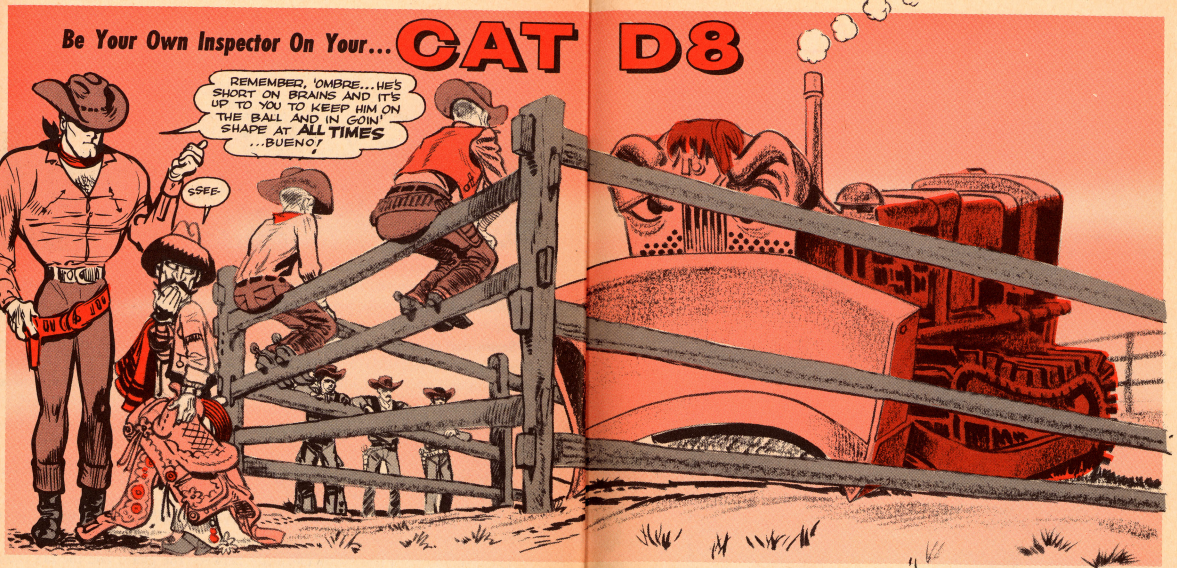


Like the rest of your Engineer construction equipment, your Caterpillar D8 tractor is built to tackle the toughest earthmoving job and stay with it until you can say "mission accomplished". A tough and rugged hunk of metal and machinery, but it's built without brains or the know-how to operate or take care of itself —that's where you come in.

You're the one that has to keep it ready to go at all times. Now, your Cat isn't tagged with any "fragile" or "handle with care" signs. Still, that's no reason to go lopping off eight of its nine lives by not maintaining or operating it right.

DEFICIENCIES

These are the things that might keep your Cat from purring happily. All you have to do is use your eyes, your ears, and your hands to spot 'em. If you can't



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DEFICIENCIES

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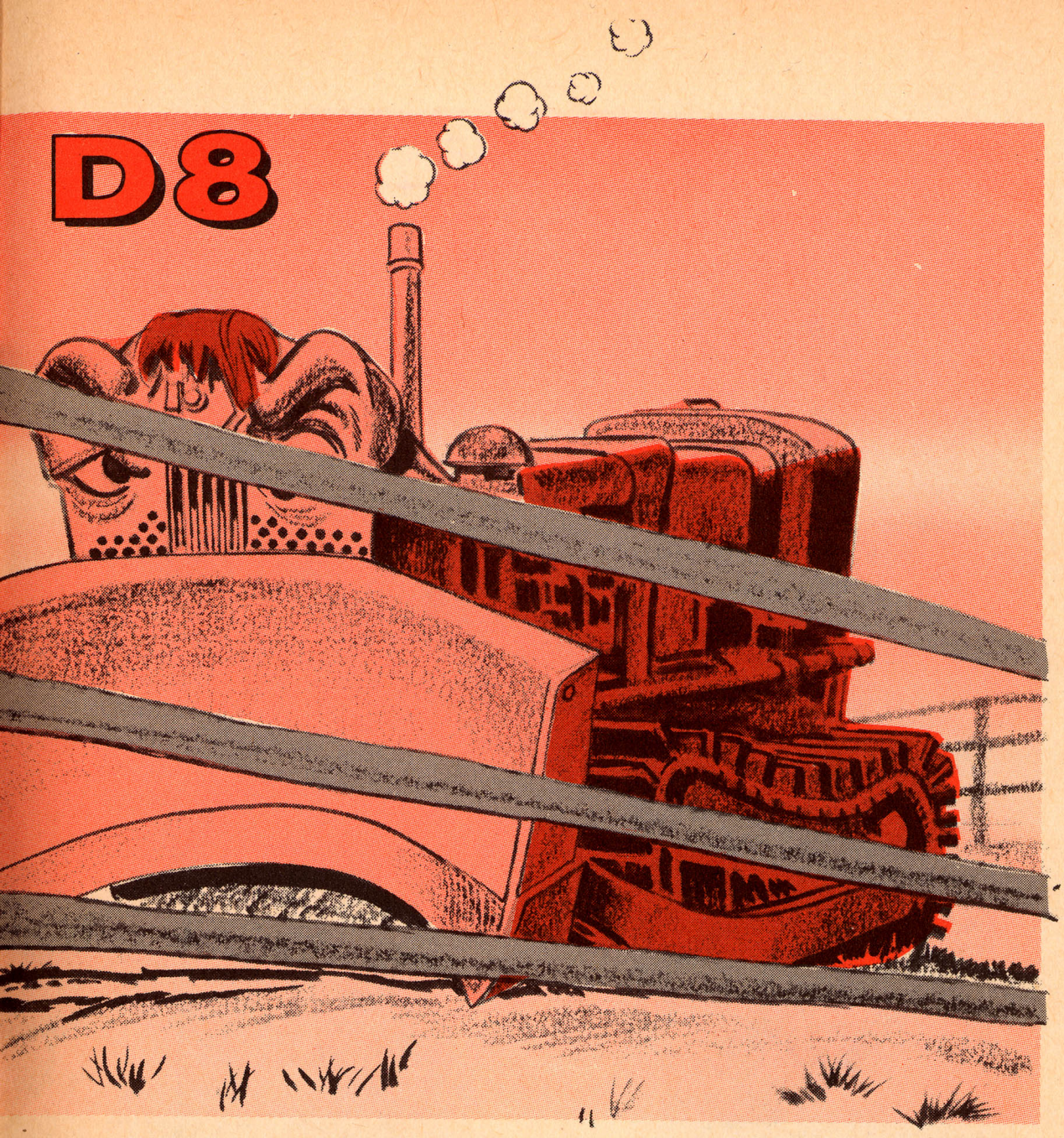
About these deficiencies—there're two kinds . . . major and minor. The major ones are more serious than the others. They're the kind that could cause your rig to break down, make for extra wear and tear, or could make it unsafe to operate. You don't want to run your equipment if it has a major deficiency. AR 750-8 (27 Mar 58), Appendix II has the full scoop on this.

A minor deficiency is the kind that won't cause your rig to quit running right off, but if it isn't fixed it could lead to a major deficiency. Some of the items below are not necessarily minor deficiencies but they need some attention anyway. Be sure to check out all details in your Cat's TM.

Your major deficiencies are in **heavy type.**



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GENERAL APPEARANCE

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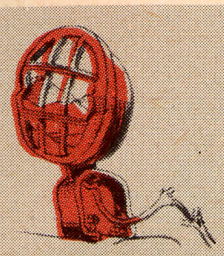
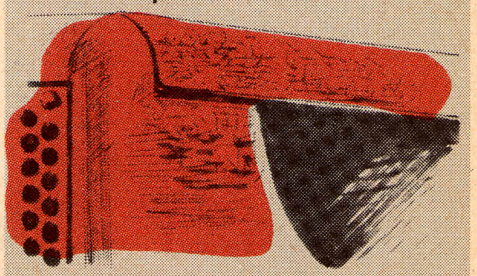


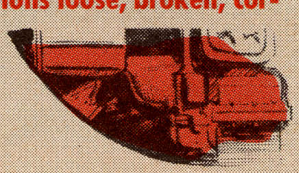
LIGHTS—Glass broken, clouded, covered with mud or paint. **Wires broken, loose,** badly frayed. Lamp loose, burnt out. Mounting loose.

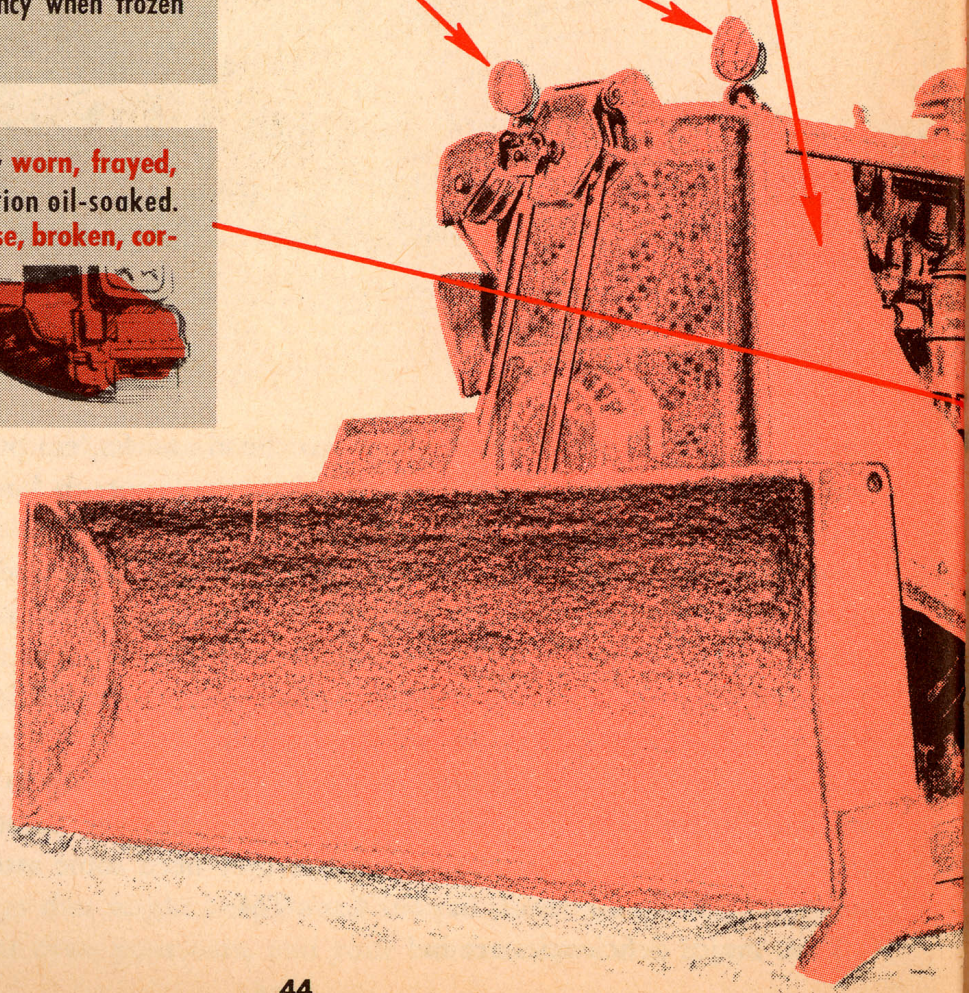
CHASSIS, HOOD, RADIATOR GUARD, INSTRUMENT PANEL, CONTROLS—Paint chipped, flaky; metal rusty.



MUD—Caked on tractor, could lead to major deficiency when frozen solid.

WIRING — Badly **worn, frayed, cracked.** Insulation oil-soaked. **Connections loose, broken, corroded.**





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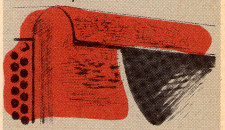

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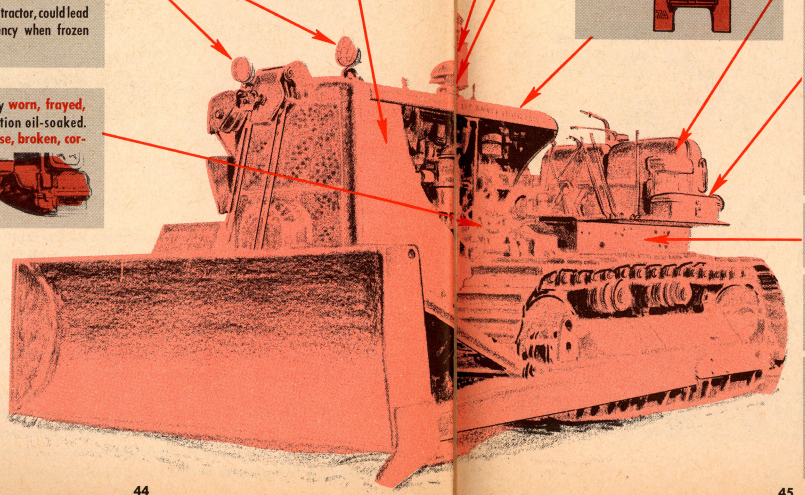
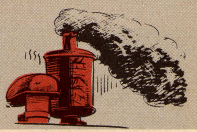
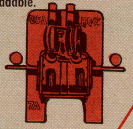


MUFFLER—Holes.

EXHAUST—Loose. Not covered when Cat is stored outdoors. (This can lead to major deficiency). Flutter valve sticks. Check this one out, too . . . if the exhaust smokes a lot when you're operating your **Cat,** report it to your section chief right away.



U.S. ARMY, UNIT MARKINGS—Missing, incorrect, not readable.



SEAT—Cushions torn.

TOOL COMPARTMENT—Lid catch broken. Rusty.

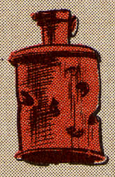
TOOLS—Missing, rusty, broken. Here're the ones that SB 5-100 says you rate for your Cat D8:

Bar, Pinch: 26 in.	FSN 5120-224-1372 (ORD)
Grease Gun, Hand	FSN 4930-360-2801 (ORD)
Hammer, Hand	FSN 5120-224-4047 (ORD)
Lubrication Order Holder	FSN 7610-355-7130 (ENG)
Oiler, Hand: 16 oz.	FSN 4930-262-8868 (ORD)
Screwdriver, Flat Tip	FSN 5120-293-1038 (ORD)
Wrench, Fuel Pump	FSN 5120-362-7686 (ORD)

BODY NUTS AND BOLTS—Loose, missing. (This could be major.)

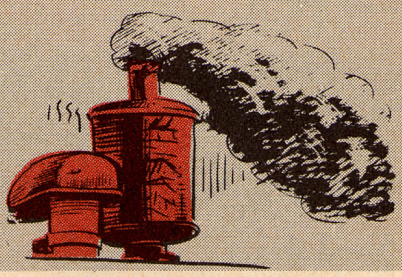
FRAME — **Bent, cracked.** (If higher echelon has deferred maintenance and said it's safe to operate, this would not be a deficiency.)

LEAKS — Look for source of **grease, oil slicks on ground underneath tractor.**

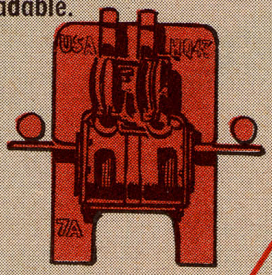


MUFFLER—Holes.

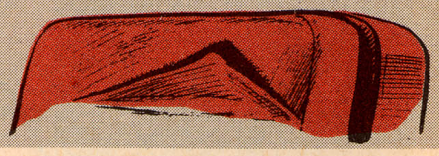
EXHAUST—Loose. Not covered when Cat is stored outdoors. (This can lead to major deficiency). Flutter valve sticks. Check this one out, too . . . if the exhaust smokes a lot when you're operating your Cat, report it to your section chief right away.



U.S. ARMY, UNIT MARKINGS—Missing, incorrect, not readable.



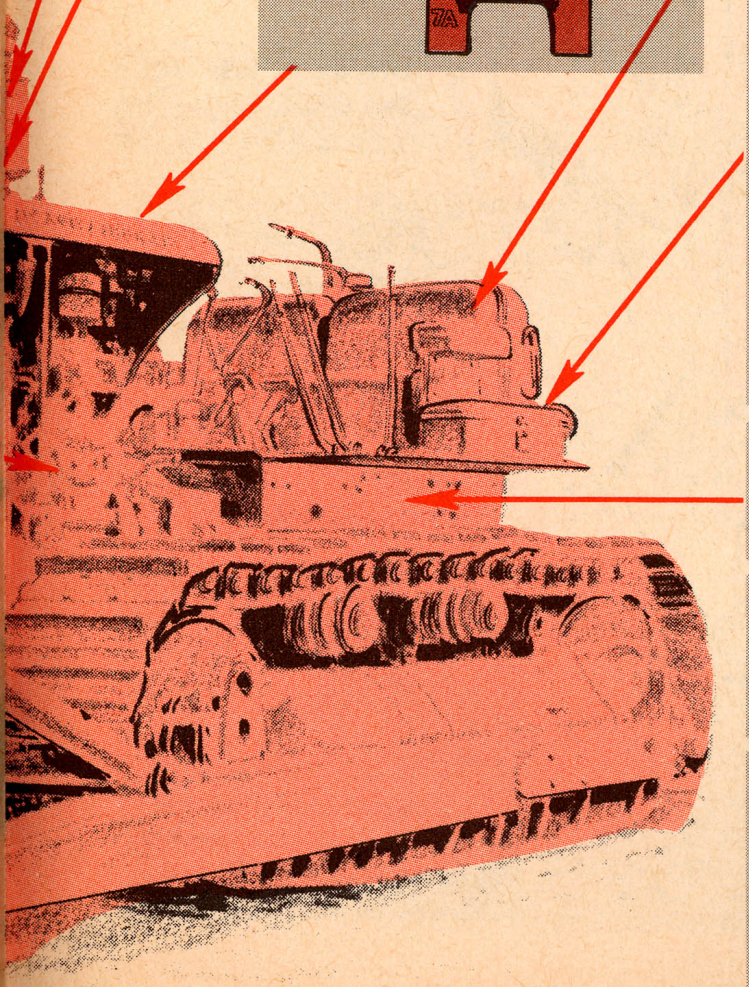
SEAT—Cushions torn.



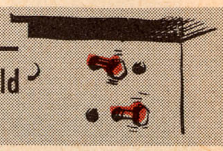
TOOL COMPARTMENT—Lid catch broken. Rusty.

TOOLS—Missing, rusty, broken. Here're the ones that SB 5-100 says you rate for your Cat D8:

Bar, Pinch: 26 in.	FSN 5120-224-1372 (ORD)
Grease Gun, Hand	FSN 4930-360-2801 (ORD)
Hammer, Hand	FSN 5120-224-4047 (ORD)
Lubrication Order Holder	FSN 7610-355-7130 (ENG)
Oiler, Hand: 16 oz.	FSN 4930-262-8868 (ORD)
Screwdriver, Flat Tip	FSN 5120-293-1038 (ORD)
Wrench, Fuel Pump	FSN 5120-362-7686 (ORD)



BODY NUTS AND BOLTS—Loose, missing. (This could be major.)

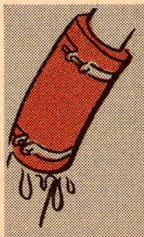


FRAME — Bent, cracked. (If higher echelon has deferred maintenance and said it's safe to operate, this would not be a deficiency.)

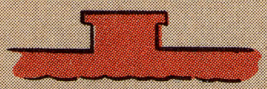
LEAKS — Look for source of grease, oil slicks on ground underneath tractor.

COOLING SYSTEM

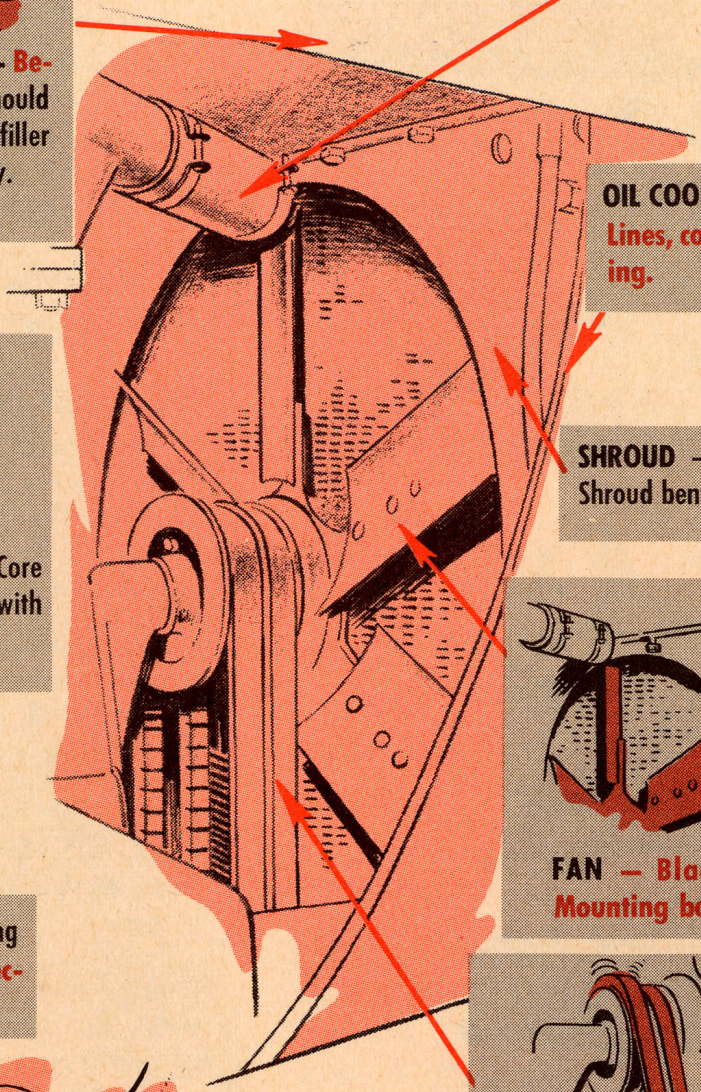
ANTIFREEZE (WHEN REQUIRED) — Not enough for temperature, low.



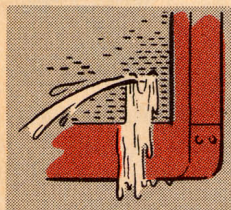
RADIATOR HOSE — Leaking, spongy, swelled (when engine is running). Clamps missing, broken.



RADIATOR COOLANT — Below proper level. (Should be within 1 inch of filler neck.) Water dirty, rusty.

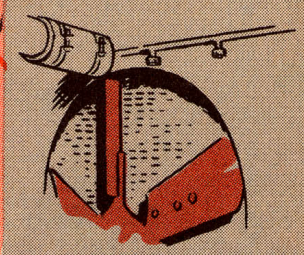


OIL COOLER — Leaking. Lines, connections leaking.



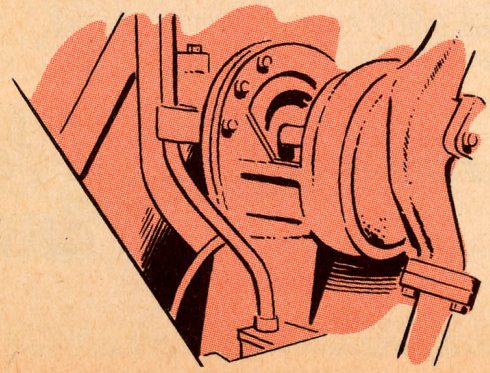
RADIATOR — Leaking. Core dirty, plugged, filled with twigs, leaves, mud.

SHROUD — Bolts loose. Shroud bent. Missing.



FAN — Blades bent. Mounting bolts loose.

WATER PUMP — Packing nut loose. Pump, connections leaking.



FAN BELTS — Too loose, too tight. (Should have 1- to 1½-in. deflection). Belts not matched; badly frayed, worn, greasy.

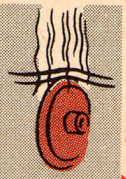
TRACK ASSEMBLY

SPRINGS & SUSPENSIONS—**Broken. Shifted leaves.** Loose U-bolts, shackle pins. Bushing worn.

TRACKS—**Too loose, too tight.** (Tension's right when track can be raised from 1½ to 2 inches above carrier roller or 1 to 1½ inches for the new model 9-A). Thin track rail, **loose track shoe bolts,** worn track pins and bushings.

ROLLERS — **Sticking, need lube.** Flat spots **Leaking lube.** (Track carrier rollers have inverted lip type seal so lube showing at rear of roller means it's okay.)

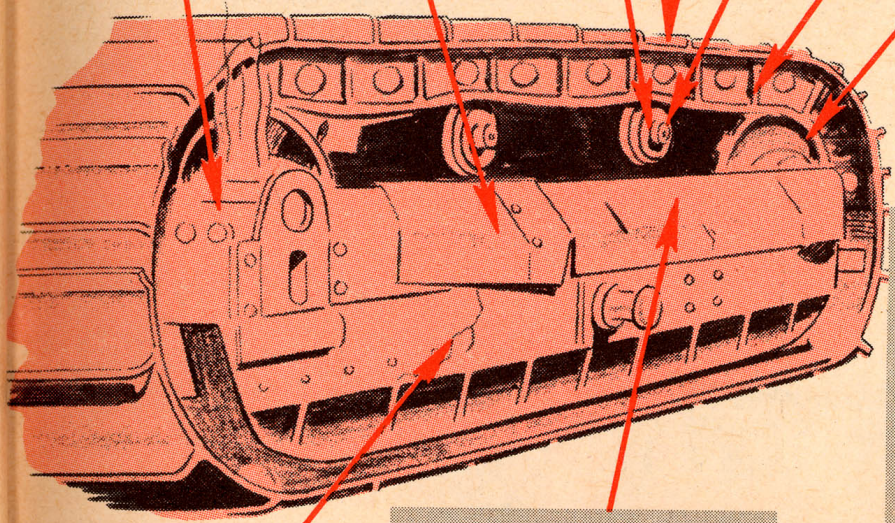
IDLERS, UPPER AND LOWER ROLLERS—Excessively hot after operation.



ROCK GUARDS — Loose, missing. (Could be major, if in area where required). Mounting bolts, nuts missing or loose.

GROUSERS — Excessively worn. (Should not be allowed to wear below 1 inch of track shoe).

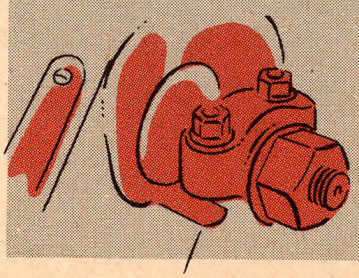
DRIVE SPROCKETS—**Excessive wear,** (Should not be worn more than 3/16 inch in thickness, measured at base of tooth before rebuilding). Movement.



LISTEN for **noises** from tracks, sprockets, rollers, and idlers that don't sound right.

Gages for determining wear on grousers, sprockets, rails, bushings are available through local purchase by ordering "Track Component Gage (D-8), 5H5624."

ADJUSTING SCREW CLAMP BOLTS—Loose.



TRACK FRAME — **Cracked, broken. Broken welds.**

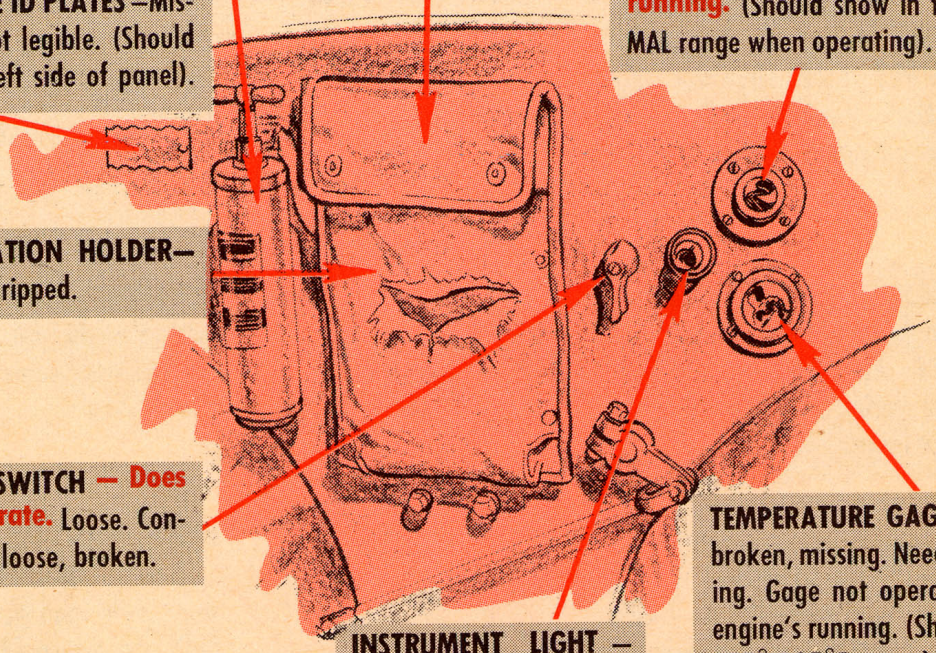
INSTRUMENT PANEL

FIRE EXTINGUISHER—Not fully charged. Loosely mounted. Wire seal broken. Missing.

OPERATOR'S PUBS — TM, LO, SF 91 missing.

LUBRICATING OIL PRESSURE GAGE —Loose. Glass broken, missing. **Needle broken, missing. Gage not operating right when engine's running.** (Should show in the NORMAL range when operating).

VEHICLE ID PLATES —Missing, not legible. (Should be on left side of panel).



LUBRICATION HOLDER— Missing, ripped.

LIGHT SWITCH — **Does not operate.** Loose. Connections loose, broken.

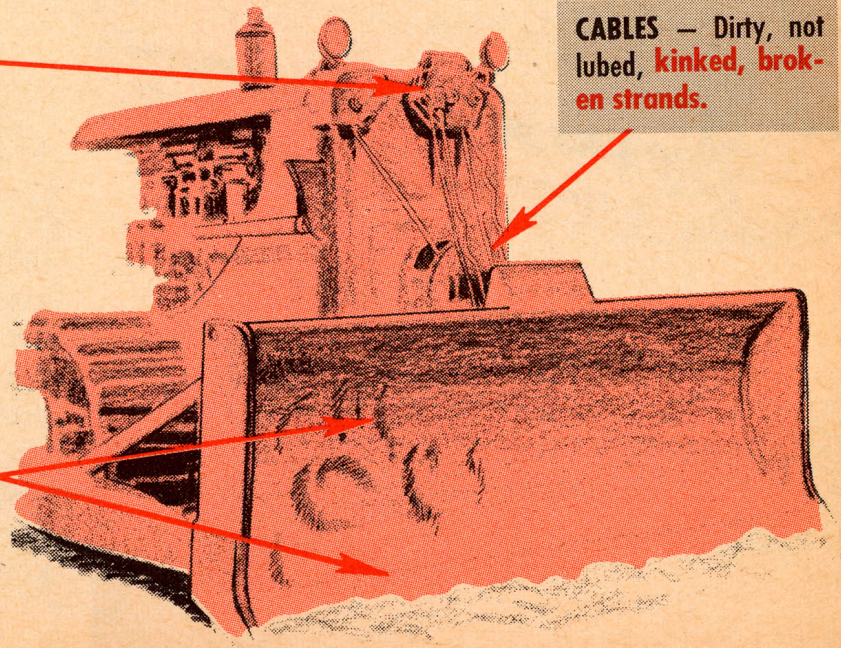
INSTRUMENT LIGHT — Lamp missing, burnt out. Reflector missing, loose.

TEMPERATURE GAGE — Loose. Glass broken, missing. Needle broken, missing. Gage not operating right when engine's running. (Should show in the 175°-185°F range).

BULLDOZER

SHEAVES — Dirty, not lubed. **Excessive wear.** Loose, missing bolts. **Cracks, breaks.**

CABLES — Dirty, not lubed, **kinked, broken strands.**

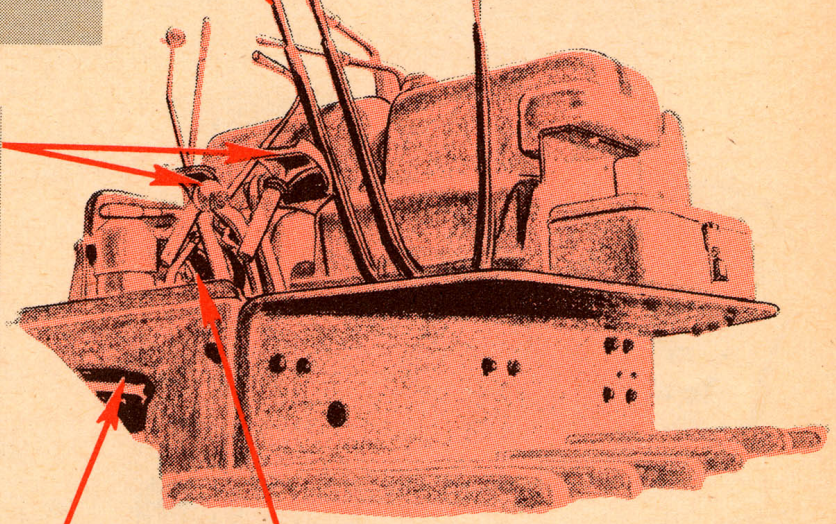


CUTTING BLADE, END BITS —**Excessively worn.** (Closer than 3/4 inch to moldboard). Holes, dents.

POWER TRANSMISSION UNITS

STEERING CLUTCHES—Not enough free movement at top of release levers. (Should be 3 inches on model 2U tractors. If you have the 9-A series, you'll have to experiment to see if this is right). **Oil below proper level in hydraulic control unit.** (Oil level should be at bead in strainer). **Control rod out of adjustment.** (Should be 1/32-in clearance between control rod and push rod in hydraulic-control unit). Pins, nuts, locks loose, missing from control linkage. **Grab, chatter when rig is operating.**

MASTER (FLYWHEEL) CLUTCH—Clutch fails to engage with snap, lever pulls easily (Model 9-A is hydraulically boosted and takes an easier pull than when stopped or engine is cold). **Won't stay engaged; grabs; chatters when engine's running.**



STEERING BRAKES—Fail to hold. (Should hold tight when pedal is pushed 3/4 way to floor plate on Model 2U rigs. If you've got the 9-A series, the brakes should be adjusted just tight enough so that the tractor will turn correctly when the steering clutch is released and the brake pedal is depressed between 5 1/2 to 7 1/2 inches.

CLUTCH HOUSING—Oil accumulated in bottom. (This doesn't go for late model tractors with oil clutches. You have to keep oil at right level then.) Drain plug missing, locked in place.

TRANSMISSION — Oil level low. **Transmission and bevel gears noisy during operation.** Gear selector lever hard to operate.

OUTERFRAME BEARING ASSEMBLY — Loosely mounted to track roller frame.

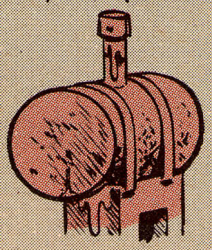
FINAL DRIVE-GEAR HUB BEARING — Adjusting lock-nut missing, loose.

STEERING CLUTCH COMPARTMENT—Oil, water accumulated. Model 9-A has an oil-type clutch, so oil in compartment is necessary. Drain plugs missing, locked in place.

FINAL DRIVE-GEAR CASES—Mounting bolts loose. **Leaks around oil seals and gaskets. Oil level low.** (Bring up to level of filler opening.) Oil dirty, contaminated.

AIR CLEANER—Loose mounting. Oil below proper level. Wrong lubricant. Dirty, contaminated. (Sediment in cup more than 1/4-in deep).

FILLER CAP—Gas leaking. Loose, does not seat right.



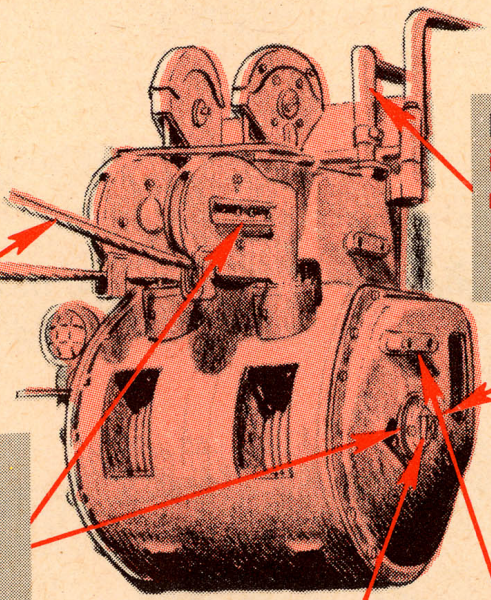
GASOLINE TANK—Rusty. Leaks.

FUEL FILTER — Leaks. Dirty, clogged. Mounting loose.

GOVERNOR LINKAGE —Bent. Connections loose.

CRANKCASE BREATHER—Dirty. Fits loosely.

CABLE CONTROL UNIT

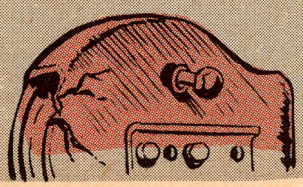


LEVER—Fails to hold blade in neutral. No free movement at top of lever. (Should have at least 4 inches of free play).

CABLES—Not lubed, unevenly wound, kinked, broken strands, dirty.

BRAKES — Fail to hold. Lining excessively worn. (Rivets touch drums). Oil, grease on lining.

SHEAVES, DRUMS—Not lubed. Excessively worn. Loose, missing bolts. Cracked.

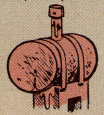


GEAR HOUSING CASE — Loose mounting assembly bolts. Oil leaking.

CLUTCH—Grabs when engaged, chatters, fails to hold.

STARTING ENGINE

FILLER CAP—Gas leaking. Loose, does not seat right.



GASOLINE TANK—Rusty. **Leaks.**

AIR CLEANER—Loose mounting. Oil below proper level. Wrong lubricant. Dirty, contaminated. (Sediment in cup more than 1/4-in deep).

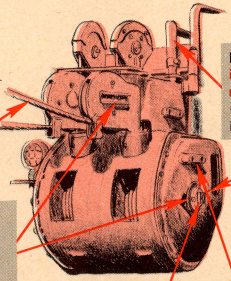
FUEL FILTER — **Leaks.** Dirty, clogged. Mounting loose.

GOVERNOR LINKAGE —Bent. Connections loose.

CRANKCASE BREATHER—Dirty. Fits loosely.

CABLE CONTROL UNIT

CABLES—Not lubed, **unevenly wound, kinked, broken strands,** dirty.



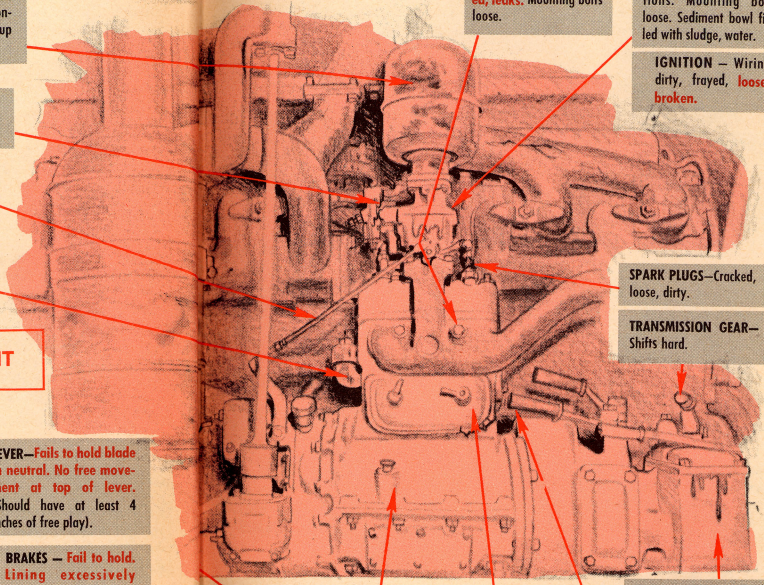
SHEAVES, DRUMS—Not lubed. **Excessively worn. Loose, missing bolts. Cracked.**

CLUTCH—**Grabs when engaged, chatters, fails to hold.**

LEVER—**Fails to hold blade in neutral. No free movement at top of lever.** (Should have at least 4 inches of free play).

BRAKES — **Fail to hold. Lining excessively worn.** (Rivets touch drums). Oil, grease on lining.

GEAR HOUSING CASE — Loose mounting assembly bolts. **Oil leaking.**



CYLINDER HEAD, MANIFOLD GASKETS—**Cracked, leaks.** Mounting bolts loose.

CARBURETOR, FUEL LINES — **Leaks.** Loose connections. Mounting bolt loose. Sediment bowl filled with sludge, water.

IGNITION — Wiring dirty, frayed, **loose, broken.**

SPARK PLUGS—Cracked, loose, dirty.

TRANSMISSION GEAR—Shifts hard.

MAGNETO — Loose connections, mounting loose.

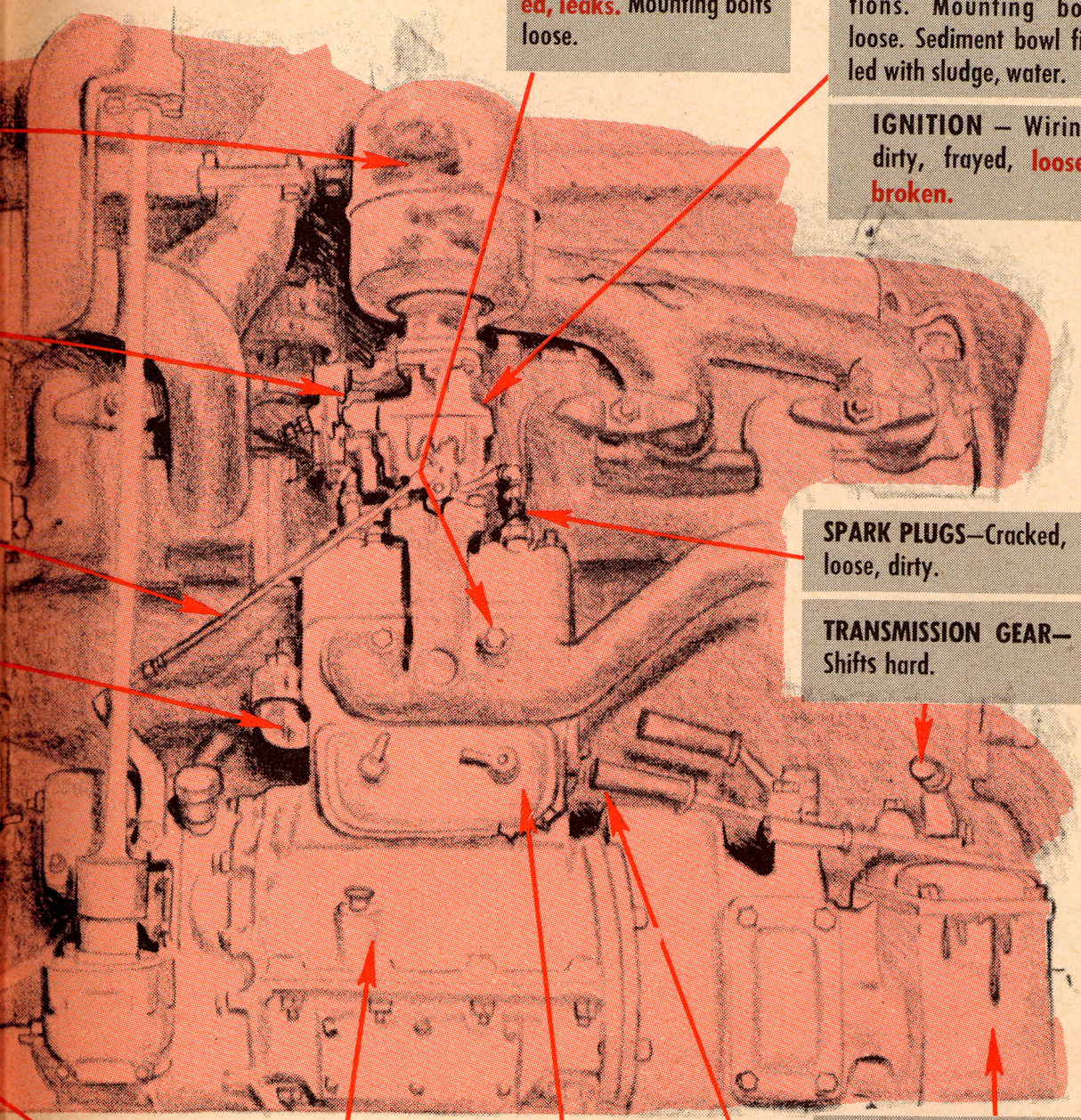
CRANKCASE— **Oil below proper level.** (Should not be more than 1/4-in below full mark on gage).

VALVE COVER GASKET — Worn, cracked. Cover fits loosely.

TRANSMISSION CASE — **Leaks. Oil below proper level.**

STARTER PINION—**Fails to engage; fails to release promptly when engine starts.** Latch spring adjusted too tight.

ENGINE



CYLINDER HEAD, MANIFOLD GASKETS — Cracked, leaks. Mounting bolts loose.

CARBURETOR, FUEL LINES — Leaks. Loose connections. Mounting bolt loose. Sediment bowl filled with sludge, water.

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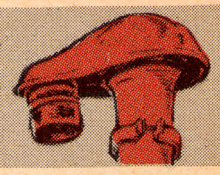
STARTER PINION — Fails to engage; fails to release promptly when engine starts. Latch spring adjusted too tight.

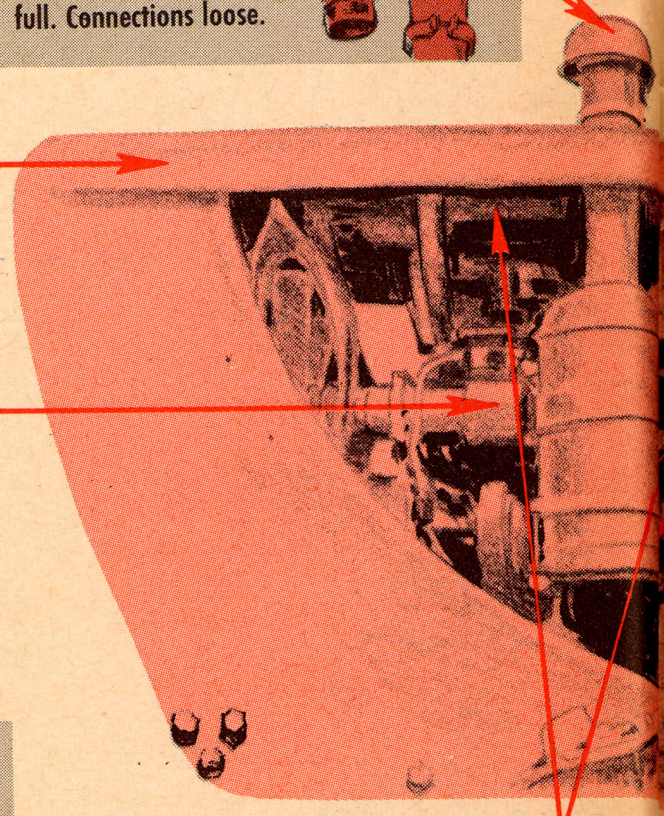
DIESEL ENGINE

GENERAL—Listen for unusual noises when you've got it knocking off the RPM. Get up in the saddle and give it a feel for power and response to controls.

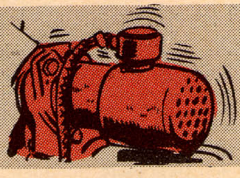
PRE-CLEANER—Dust collector jar more than ¾ full. Connections loose.



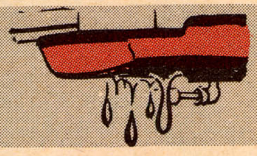
FILLER CAP—Loose. Does not seat right. Element missing, dirty. Dirt, scum around filler hole.



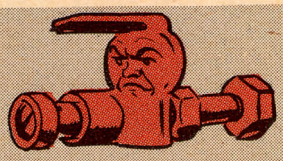
GENERATOR—Loose mounting. Connections loose.



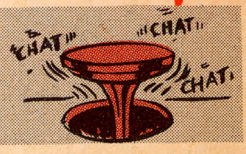
FUEL TANK—Vent closed. Mounting bolts loose. Leaking. Rusty.



MAIN FUEL TANK VALVE—Closed, fails to operate.



VALVES—Chatter when tractor is operating.



FUEL PRESSURE GAGE—Not registering when engine's operating. Glass missing, broken. Needle broken, missing.

FUEL TANK GASKET—Worn, cracked.

MODIFICATIONS

Before you call it a day, run down the list of MWO's for your D8 and see whether they've been applied. If there're any missing—let your section chief know right now.

Here're the ones that apply to your D8:

MWO ENG 3040-2 (28 JUNE 46)—Tells you how to use a piece of steel sheet to make a crankcase guard extension to protect the lower radiator casting and the radiator.

MWO ENG 3040-3 (7 MAR 55)—Eliminates radiator leaks in the shunt tubes by cutting the tubes and using brass plugs.

DIESEL ENGINE

GENERAL—Listen for unusual noises when you've got it knocking off the RPM. Get up in the saddle and give it a feel for power and response to controls.

PRE-CLEANER—Dust collector jar more than ¾ full. Connections loose.

AIR CLEANER—Loose mounting. **Oil below proper level** (more than 3/16-in below full mark when engine is operating). Sediment in cup more than ½-in deep.

CYLINDER HEAD, MANIFOLD, GASKETS — Cracks, leaks. Mounting bolts loose.

FILLER CAP—**Loose.** Does not seat right. **Element missing,** dirty. Dirt, scum around filler hole.

FUEL LINES—**Leaking. Loose connections.**

GENERATOR—Loose mounting. Connections loose.

NOZZLES, INJECTOR PUMP—**Housing, lines, connections leak.** Oil not at proper level (Keep filled to top of filler elbow).

FUEL TANK—Vent closed. Mounting bolts loose. **Leaking.** Rusty.

CRANKCASE BREATHER—Dirty, fits loosely.

MAIN FUEL TANK VALVE—**Closed, fails to operate.**

DIESEL FUEL FILTER—Water, sediment in housing. **Leaks around housing, connections, when operating.**

FUEL PRESSURE GAGE—Not registering when engine's operating. Glass missing, broken. **Needle broken, missing.**

VALVES — **Chatter when tractor is operating.**

SWITCHES—Loose. Connections loose, corroded.

FUEL TANK GASKET—Worn, cracked.

CRANKCASE—**Leaks. Oil below proper level.** (Level should be about 1 to 1½ inch above full mark when engine is not operating or not more than 3/16 inch below full mark when engine is operating).

FULL MARK

1" TO 1½"

OIL FILTER—**Leaking.** Excessive sludge in filter housing.

MODIFICATIONS

Before you call it a day, run down the list of MWO's for your D8 and see whether they've been applied. If there're any missing—let your section chief know right now.

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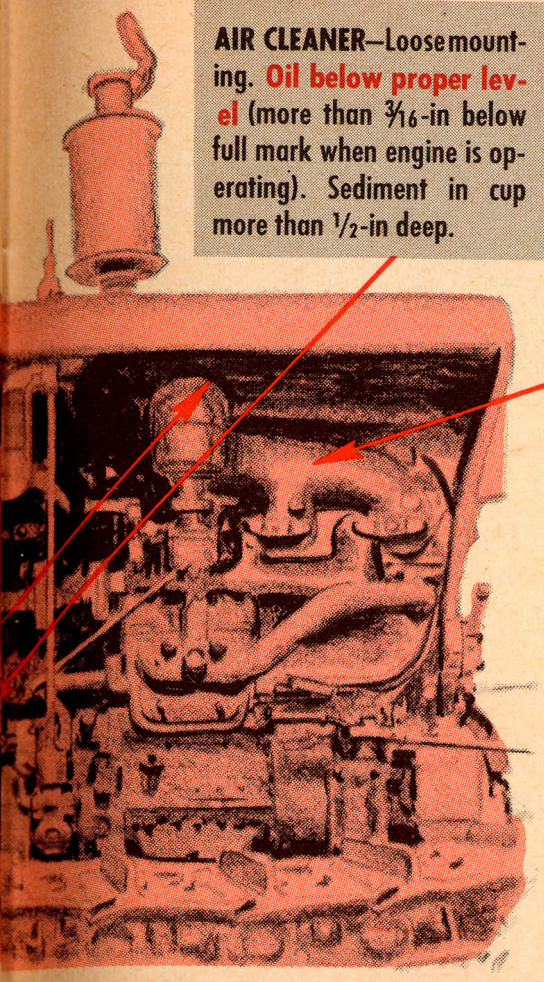
MWO ENG 3040-3 (7 MAR 55)—Eliminates radiator leaks in the shunt tubes by cutting the tubes and using brass plugs.

MWO ENG 3040-4 (12 JUNE 55)—Tapes the metal woven covering from generator to the voltage regulator to keep water from entering the regulator through the cover.

MWO ENG 3040-5 (26 JUNE 56)—Adds an extension to the starting crank on the starter engine. This doesn't apply to D8's with front-mounted starting cranks... or those with Caterpillar shaft assembly 140/4F3716 . . . or crank 4H4428.

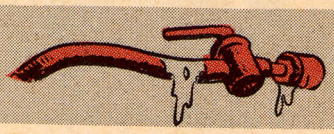
MWO 5-3040-6 (12 DEC 56)—Tells how to make and install lifting attachments.



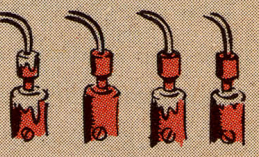
AIR CLEANER—Loose mounting. **Oil below proper level** (more than 3/16-in below full mark when engine is operating). Sediment in cup more than 1/2-in deep.

CYLINDER HEAD, MANIFOLD, GASKETS — Cracks, leaks. Mounting bolts loose.

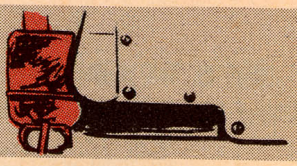
FUEL LINES—**Leaking. Loose connections.**



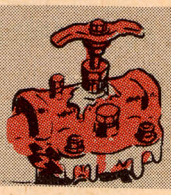
NOZZLES, INJECTOR PUMP—**Housing, lines, connections leak.** Oil not at proper level (Keep filled to top of filler elbow).



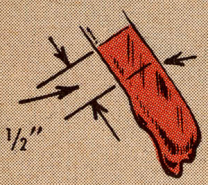
CRANKCASE BREATHER—Dirty, fits loosely.



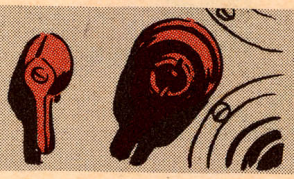
DIESEL FUEL FILTER—Water, sediment in housing. **Leaks around housing, connections, when operating.**



CRANKCASE—**Leaks. Oil below proper level.** (Level should be about 1 to 1 1/2 inch above full mark when engine is not operating or not more than 3/16 inch below full mark when engine is operating).



SWITCHES—Loose. Connections loose, corroded.



OIL FILTER—**Leaking.** Excessive sludge in filter housing.

MWO ENG 3040-4 (12 JUNE 55)—Tapes the metal woven covering from generator to the voltage regulator to keep water from entering the regulator through the cover.

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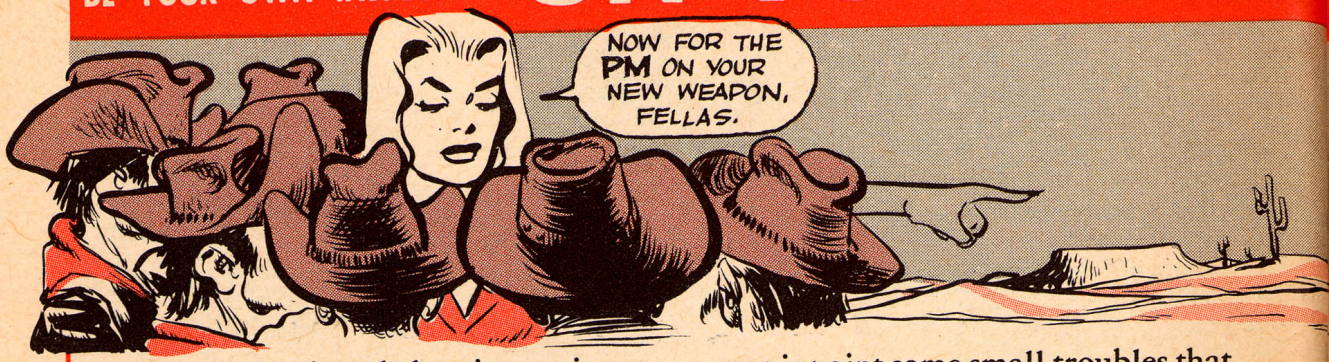
BE YOUR OWN INSPECTOR ON YOUR '44



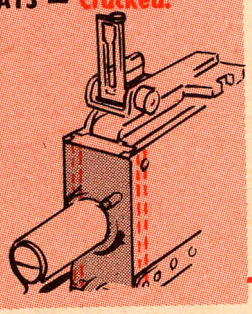
That's right. A real close inspection now may pinpoint some small troubles that could grow into big ones at just the wrong time.

This checklist will clue you on what to look for. But don't stop there. Always be on the lookout for rust, 'specially on polished machined surfaces, corrosion, cracks, dents and wear on all parts of the gun and mount. Keep the parts lubed that're supposed to be lubed. And two final points:

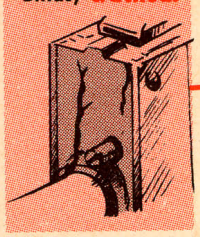
HAVE YOUR GUN HEADSPACED AND TIMED RIGHT ALL THE TIME.
NEVER FIRE LIVE AMMO WITHOUT REMOVING THE BLANK FIRING ATTACHMENTS.

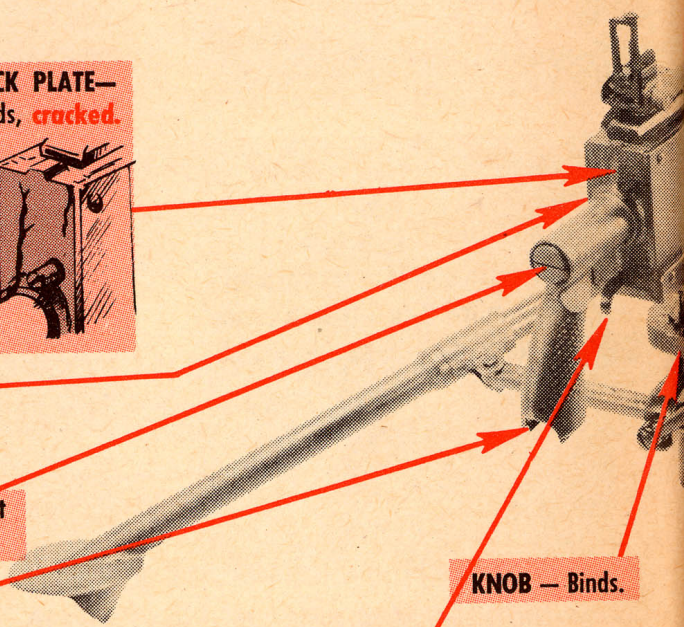
HERE'RE THE THINGS TO LOOK FOR. THE MAJOR DEFICIENCIES ARE IN HEAVY TYPE. IF ANY OF THESE SHOW UP, BUZZ YOUR ARMORER.

BACK PLATE GUIDE-WAYS — Cracked.



BACK PLATE— Binds, cracked.



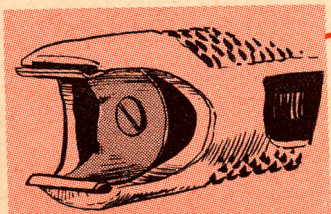


ADJUSTING SCREW — Slot not vertical or horizontal.

KNOB — Binds.

TRIGGER — Bent.

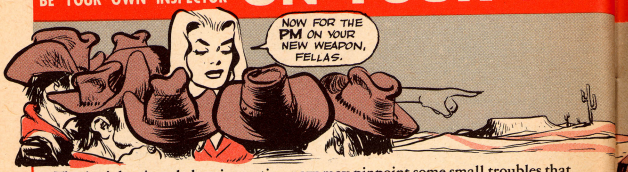
TRAVERSING SLIDE LOCK LEVER — Won't work.



STOCK SPRING — Missing, out of shape.

BE YOUR OWN INSPECTOR

ON YOUR '44 MACHINE GUN



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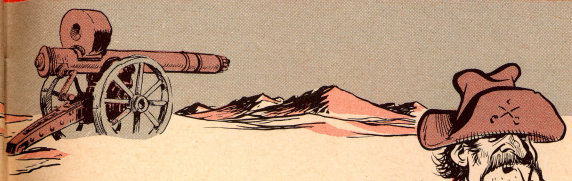
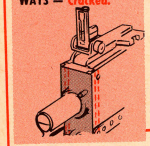
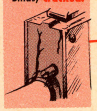


BACK PLATE GUIDE-WAYS — Cracked.

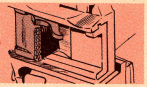


BACK PLATE— Binds, cracked.

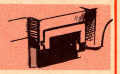


COVER LATCH— Won't hold.

BELT FEED PAWL— Binds.



CARTRIDGE STOP — Loose, missing.



PINTLE — Tight.

LOCK — Won't hold.

ADJUSTING SCREW — Slot not vertical or horizontal.

KNOB — Binds.

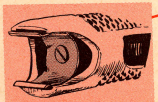
TRIGGER — Bent.

TRAVERSING SLIDE LOCK LEVER — Won't work.

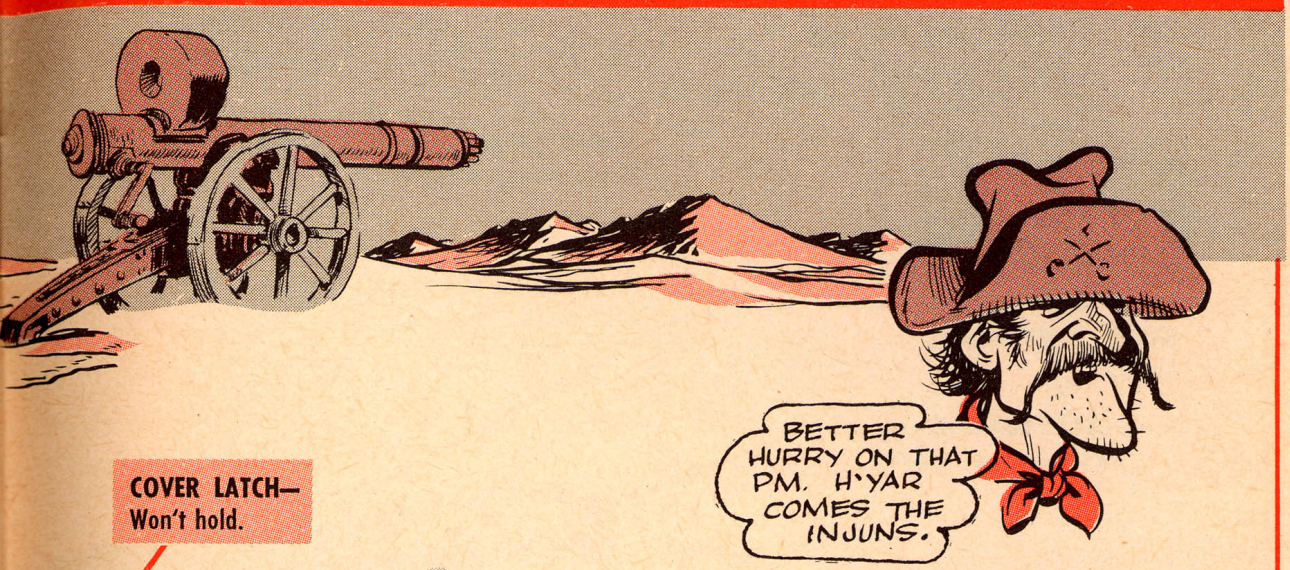
SLEEVE — Won't work smoothly.

GRADUATIONS — Not clear, missing.

STOCK SPRING — Missing, out of shape.

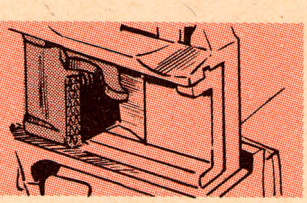


MACHINE GUN

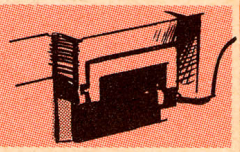


COVER LATCH— Won't hold.

BELT FEED PAWL— Binds.

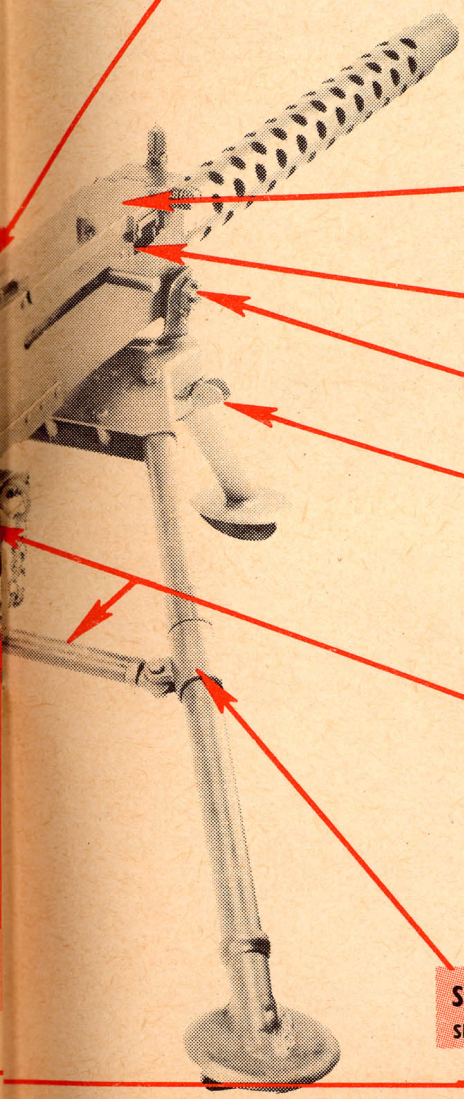


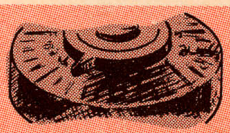
CARTRIDGE STOP — Loose, missing.



PINTLE — Tight.

LOCK — Won't hold.

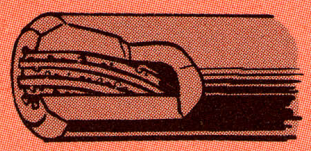




GRADUATIONS — Not clear, missing.

SLEEVE — Won't work smoothly.

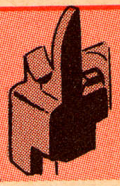
BARREL — Excessive pitting, worn lands, carbon, **dirt, sand, any bore obstruction, threads damaged.**



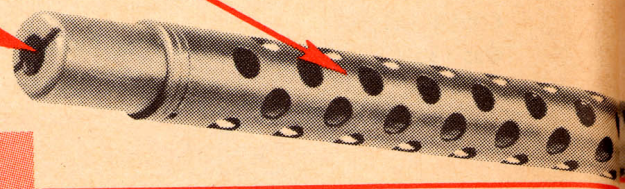
BARREL JACKET — Loose, battered.

FRONT BARREL BEARING — **Not staked,** threads damaged, carbon.

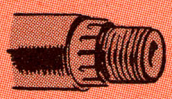
SHORT ROUND STOP — **Missing, not staked, loose.**



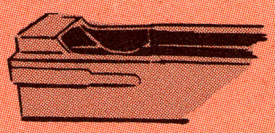
FRONT SIGHT — Out of alinement, loose, moving parts bind.



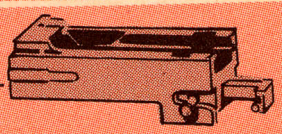
BARREL LOCKING SPRING NOTCHES — **Battered.**

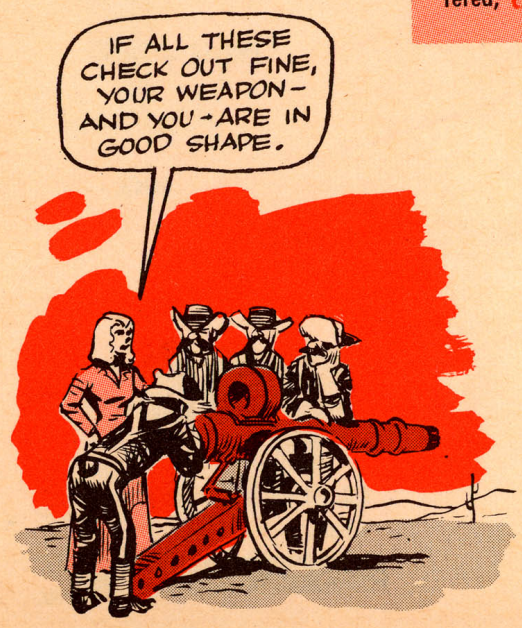


BARREL LOCKING SPRING — **Loose, no tension.**



BARREL EXTENSION — Battered, **cracked,** rusted.

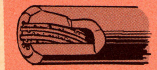




LEGS — Bent.

LATCH — **Won't hold.**

BARREL — Excessive pitting, worn lands, carbon, dirt, sand, any bore obstruction, threads damaged.



BARREL JACKET — Loose, battered.

FRONT BARREL BEARING — Not staked, threads damaged, carbon.

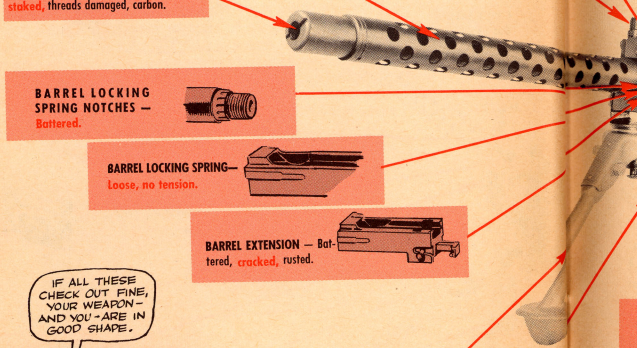
BARREL LOCKING SPRING NOTCHES — Battered.

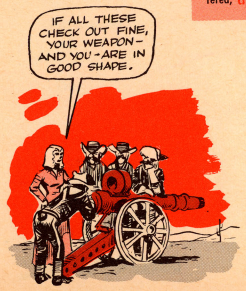
BARREL LOCKING SPRING — Loose, no tension.

BARREL EXTENSION — Battered, cracked, rusted.

SHORT ROUND STOP — Missing, not staked, loose.

FRONT SIGHT — Out of alinement, loose, moving parts bind.





LEGS — Bent.

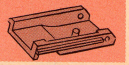
LATCH — Won't hold.

BELT FEED LEVER — Bent, binds, heavy wear.

COVER — Binds, heavy play in trunnion, catch group won't hold cover open.

BELT HOLDING PAWL SPRING — Battered.

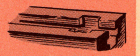
BELT FEED SLIDE — Binds.



REAR SIGHT — Out of alinement, loose, moving parts bind.

RECEIVER — Rivets loose.

BREECH LOCK RECESS — Worn, damaged.

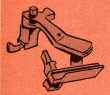


LOCK FRAME — Bent, loose.

THREADS — Burred.

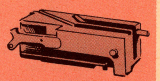
FIRING PIN — Worn, pointed, binds, broken, missing.

DRIVING SPRING ROD AND GUIDE PINS — Bent, damaged.



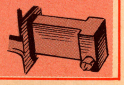
SEAR, EXTRACTOR, COCKING LEVER — Binding, worn.

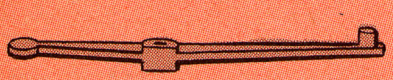
BOLT — Binds, rusted.



SEAR NOTCHES — Worn where engaged by firing pin.

BARREL PLUNGER STUD — Busted.



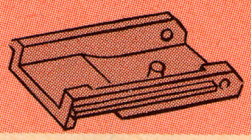


BELT FEED LEVER — Bent, binds, heavy wear.

COVER — Binds, heavy play in trunnion, catch group won't hold cover open.

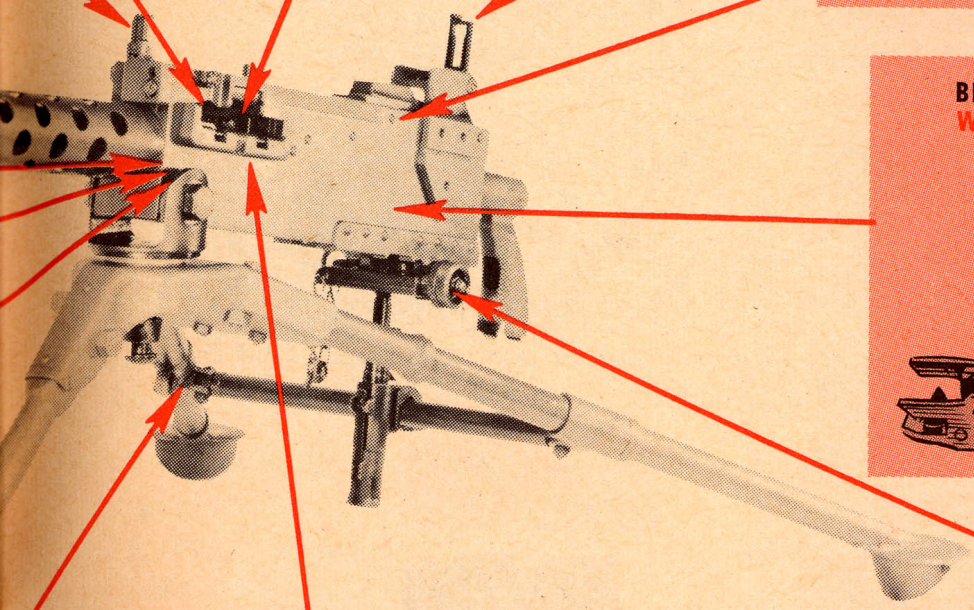
BELT HOLDING PAWL, SPRING — Battered.

BELT FEED SLIDE— Binds.

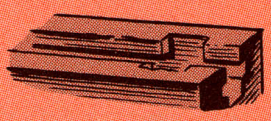


REAR SIGHT — Out of alinement, loose, moving parts bind.

RECEIVER — Rivets loose.



BREECH LOCK RECESS — Worn, damaged.

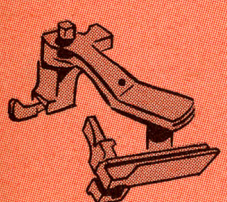


LOCK FRAME — Bent, loose.

THREADS — Burred.

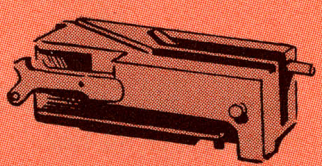
FIRING PIN — Worn, pointed, binds, broken, missing.

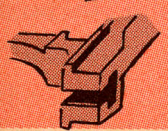
DRIVING SPRING ROD AND GUIDE PINS— Bent, damaged.



SEAR, EXTRACTOR, COCKING LEVER—Binding, worn.

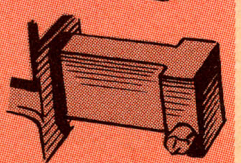
BOLT — Binds, rusted.

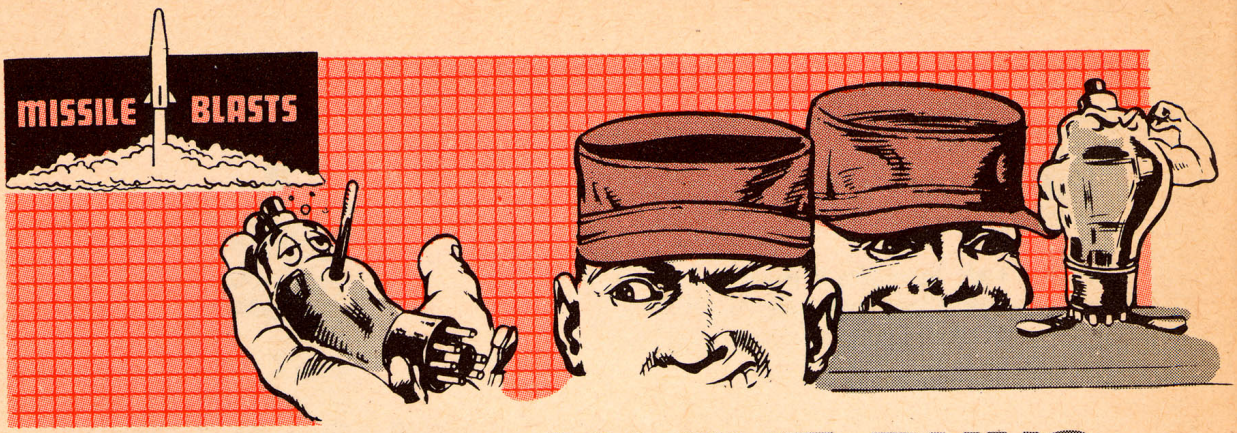




SEAR NOTCHES—Worn where engaged by firing pin.

BARREL PLUNGER STUD Busted.

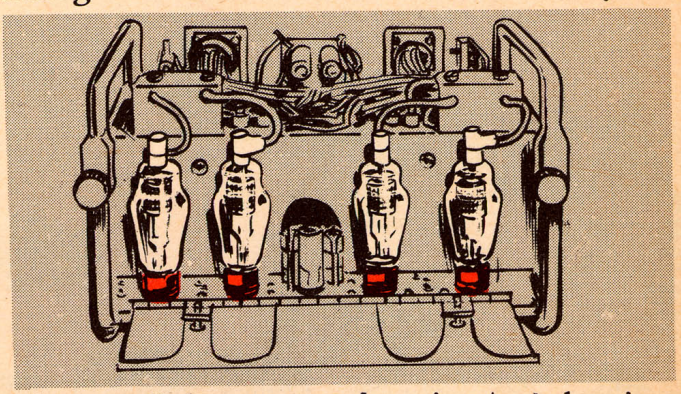




YOUR 6901 ON THE RUN?

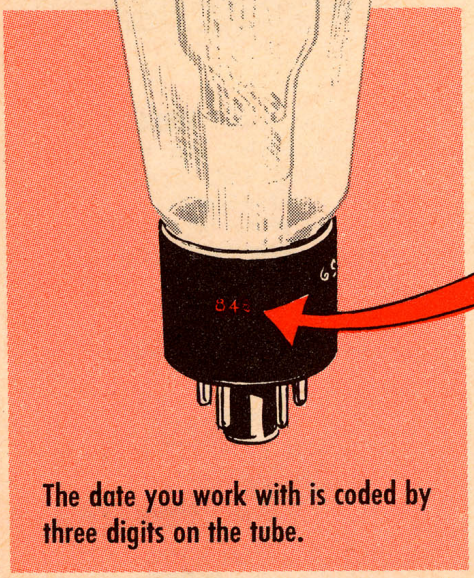
Time for a question.

How're you Nike missilemen making out with the 6901 rectifier tubes in your fire control power supplies?



The 6901 replaced the 393A rectifier tube and came into the system with a reputation of being able to take it. One big deal is that the thermostats in your power supplies can go on the blink and the 6901 won't be hurting.

'Course . . . you just might run into a clinker now and again. And there's a warranty on faulty tubes. It won't hold up, tho, if the tube is more'n a year old.



The warranty also goes out the window if the tube is operated more'n 500 hours when the temperature around the tube is between 60 and 70 degrees Fahrenheit . . . or longer'n 150 hours when the temperature is −40° F to +60° F.

The hours of operation and the temperature of the area it was working in are

mighty important . . . so include that info when you send back a tube still covered by the warranty.

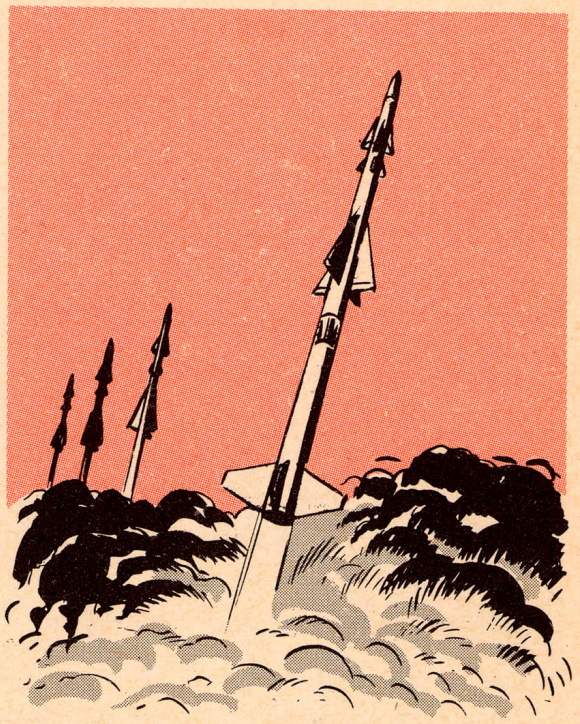
If you do run into a bum tube, and the warranty is still good, send it back to Erie Ordnance Depot, Port Clinton, Ohio. Mark the tube like so:

"Latent Defect Item—Returned for Inspection."

The Ordnance people'll know how old the tube is by the date code, but it's up to you to tell 'em how long the tube was running under what temperatures.

DON'T TOSS FOR A LOSS

When you fire a Nike-Ajax missile, there are some things back on the ground you don't have to think about holding on to any longer. Once the missile is on the way, you just don't need 'em.



As a f'rinstance...here's a rundown on four things that become useless once the booster starts spitting flame.

1. Constraining screw rack in the M27 safety and arming device; that is, if you still have M27's.
2. Aluminum shipping plug used in the warhead.
3. Shorting plug in the electric Jato igniter.
4. Plastic shipping plug in the M5 Jato unit.

But—as long as your missiles don't get any closer to the sky than the end of the launching rails, you want to hold on to those plugs and screws. You need 'em when you send the items they belong to back through channels to the storage area. The guys in your support unit'll most likely tear at their hair when they have to do double duty by requisitioning the plugs and screws.

W(H)ATT'S WRONG?

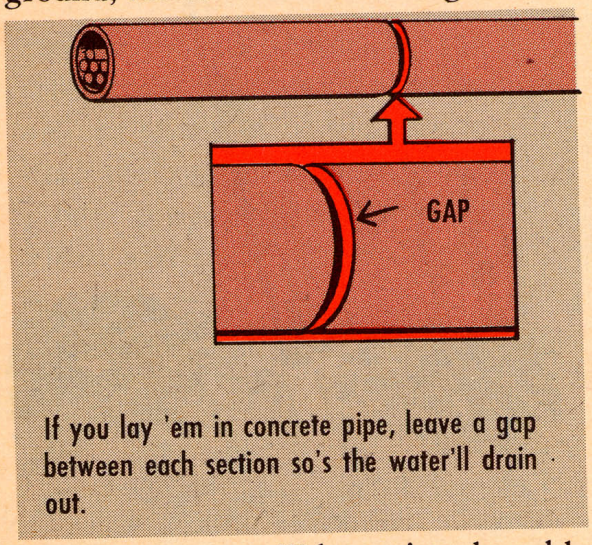
Nothing, long as you're using the right size lightbulb above the status board in your LCT van at your Nike-Ajax site. But, if you're using 125-watt bulbs 'stead of the 60-watters you're supposed to, the bulb's heat will burn the insulation from the wiring in no time. So play it safe—stick to the 60-watt bulbs . . . never, never use anything larger.

CABLE CAPERS

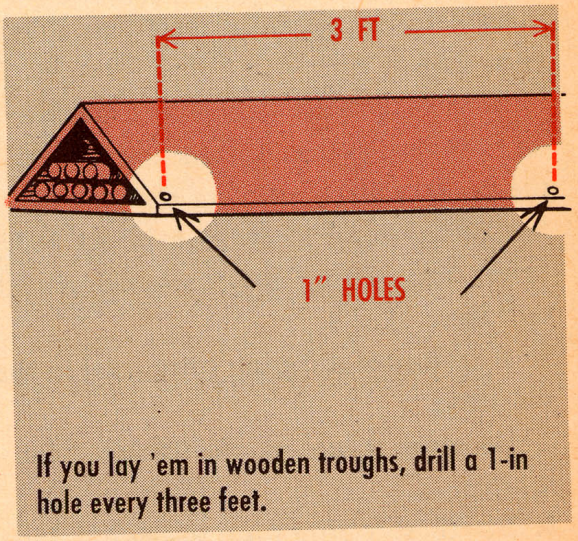
If you happen to be laying in new interconnecting cables or replacin' the old ones around your Nike site, remember to give 'em lots of protection.

With cables buried hither and yon, unless you're a genius with X-ray vision, you never know when you'll be ridin' over 'em in your Jeep or truck. And, a busted cable's no good to anybody.

To help your cables live longer and also to keep 'em from the freezin' underground, shield 'em with a trough.



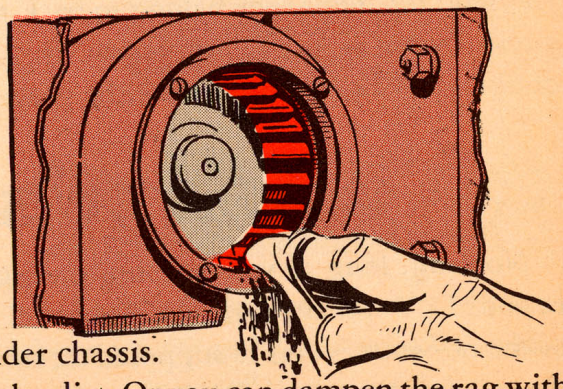
If you lay 'em in concrete pipe, leave a gap between each section so's the water'll drain out.



If you lay 'em in wooden troughs, drill a 1-in hole every three feet.

Either way, you'll be saving the cables from the hazards of traffic and protecting 'em from deterioration.

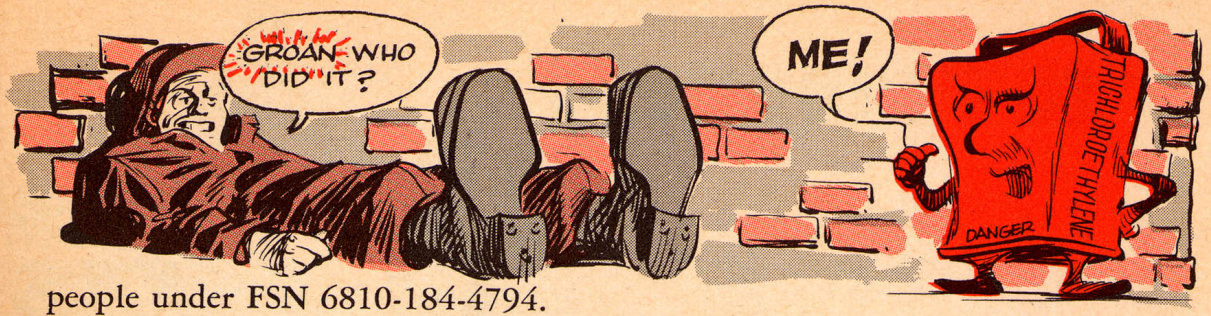
HOT COOLERS?



It doesn't hurt now and again—matter of fact it does lots of good—to clean the dirt off the impeller blades on the cooling blower motor assembly in your Nike launching control trailer.

Dirt makes the impeller heavier and that makes the motor work harder to get it around so's it can cool your responder chassis.

A plain, dry rag will get rid of a lot of the dirt. Or you can dampen the rag with trichloroethylene. You can get a five-gallon can of the stuff from the Chemical



people under FSN 6810-184-4794.

You want to watch trichloroethylene, tho. It can kick you in the teeth and knock you on your back almost as quick as carbon tet. In other words, keep the air moving around you by having the door and escape hatch open when you're using the stuff.

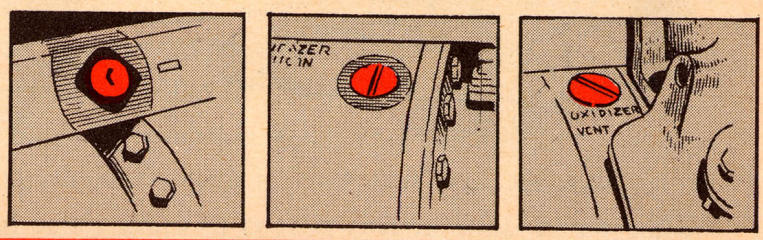
IN CASE YOU'RE WONDERING...

Certain places on your Nike-Ajax missile get hit with Fluorolube...and others get the MIL-L-4343A finger treatment.

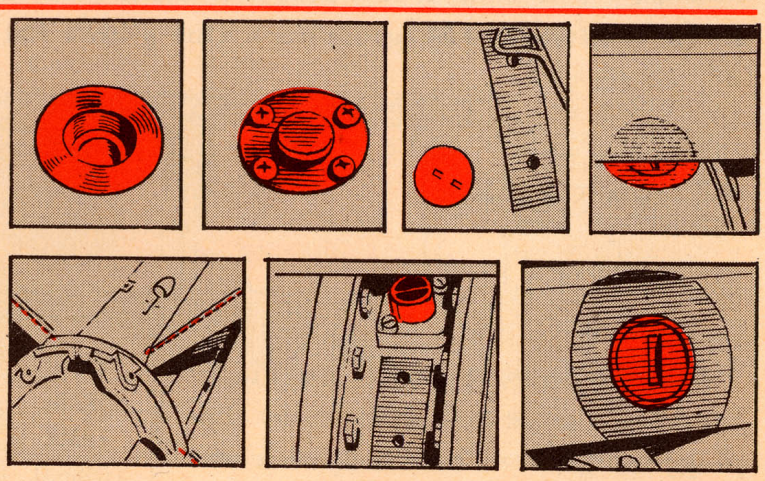
Fluorolube—it's real nomenclature is LUBRICANT, non-oxidizing—is dabbed on the oxidizer fill, drain and vent plugs.

It's an Ordnance item and is listed on page 25 of Ord 7 SNL Y2, dated April 1958. FSN9150-698-3820 is worth a 1-oz tube.

USE
FLUOROLUBE
ON THESE

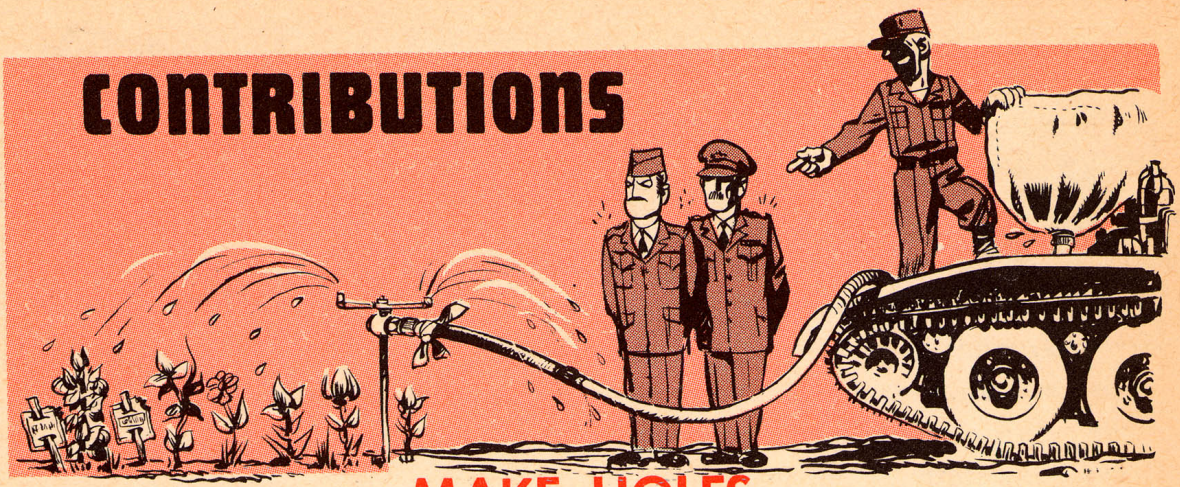


USE
MIL-L-4343A
ON THESE



MIL-L-4343A is put on the fuel fill, drain and vent plugs...air fill valve... aileron hinge pins...and starting mix plugs. Your requisition wants to call the stuff GREASE, AIRCRAFT, when you ask the Quartermaster people for one pound under FSN 9150-8255. It's also on page 25 of Order 7 SNL Y2.

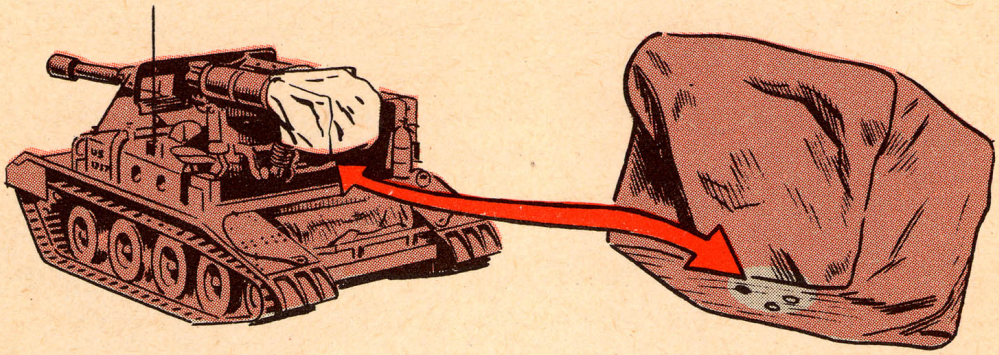
CONTRIBUTIONS



MAKE HOLES

Dear Editor,

We've found on our M56 self-propelled 90-mm gun (SPAT) that when the breech cover is in place a sagging pocket forms in the lower part of the cover. This pocket fills up with water during a rain.



What we've done at this post is to make three holes in the lower part of the cover, reinforced with grommets. This allows the water to drain out.

Thomas Schropp
Ft Campbell, Ky

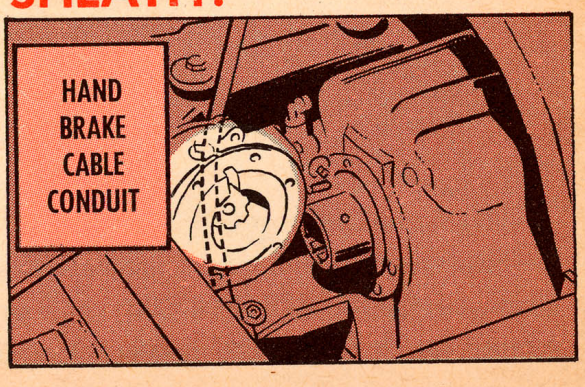
(Ed Note—Good idea.)

SLIPPERY SHEATH?

Dear Editor,

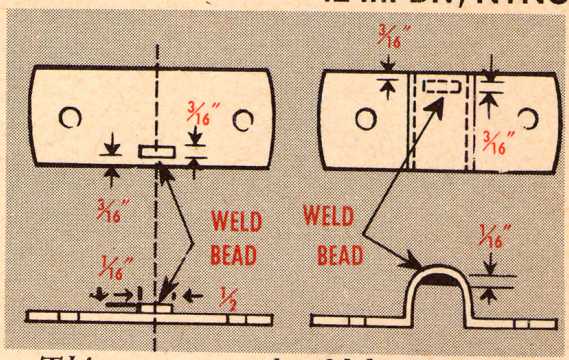
We've been having trouble with the hand brake cable conduit (sheath) slipping through its anchor clamp under the cab of our 5-ton (G744-series) trucks.

We tried tightening and bending the clamp for a quick fix, but that doesn't fix it for very long.



So we finally solved the problem by welding half a flat washer to the front of the bracket. This lets only the cable core through, while stopping the cable sheath.

Sgt Norman Wolf
42 Inf Div, NYNG



(Ed Note—Your fix'll get the job done. But an MWO gave a fix for this that shoulda been applied long ago. It was MWO Ord G744-W28 (6 Feb 56) that said to weld beads on the inside of the cable clamp. O'course you might save time if you try first to get your mitts on a new type clamp that's been whomped up to take care of this slippage problem. This new part should be on tap now in supply in most areas. The new clamp's got a continuous depressed rib in its middle section that gets a better grip on the cable sheath. This rib fits into a groove in new-type cable sheaths, and also gives you a tighter grip on the old type. Here's how to order the new clamp: Strap, retaining, FSN 5340-512-1948.)

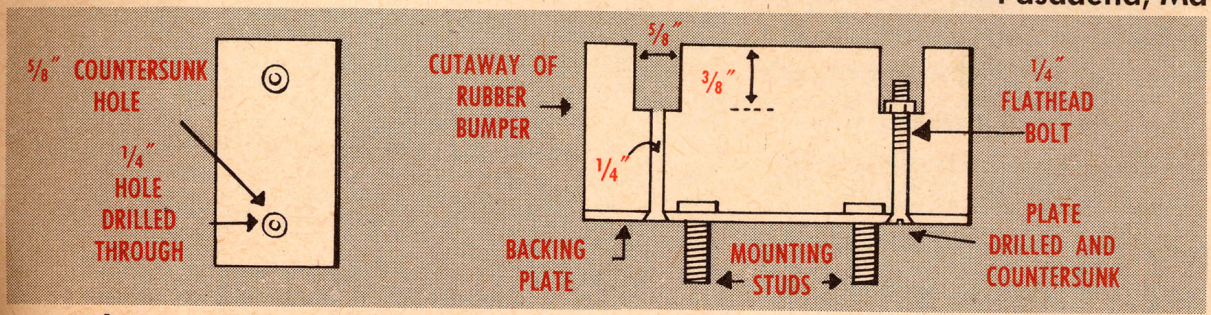
BOLT THE BUMPERS

Dear Editor,

We've been having trouble with the rubber pad assemblies on our Nike elevator doors. The pads were glued on, and the glue isn't holding.

We bolted the pads on the backing plate by countersinking a 5/8-in hole in the pad, drilling a 1/4-in hole through the pad and plate, and bolting it in place with a 1/4-in flathead bolt countersunk in the plate. Now our pad assemblies don't come off.

Sgt Charles V. Lambert
Pasadena, Md



(Ed Note—These rubber pad assemblies have been installed with bolts at a lot of sites. One thing's for sure, bolts will hold bumper pads better than glue. With this fix, a 1/4-in bolt is the limit. Anything bigger could damage the backing plate. You can get a new store-boughten bumper assembly, (Wayne Pump Co. Part No. NE 10793), by requisitioning FSN 3960-571-1784 through Engineer Repair Parts Channels. You'll have to fix the new ones if the bonding lets go.)

CRESCENT'S BACK

Dear Editor,

We ran into some trouble here when they took the crescent wrenches out of our G749-series 2½-ton truck's OVM. Had trouble checking our differentials and transmissions, as there is only one wrench in the 2nd echelon set for transmission and differential plugs.

So, we made a little fix for ourselves on our WRENCH, PLUG: stght bar, sq, ½ in plug, 2½ in lg . . . FSN 5120-708-3302. We went and got us some ¼-inch concrete reinforcing rod and put on some handles by cutting off the rod in 4-inch lengths and welding them to the plug wrenches.

Sgt Richard D. Torres, Sr.
Fort Leonard Wood, Missouri

(Ed Note—You've got a fine temporary fix there, Sarge. But check Ord 7 SNL G749 (Apr 57). Wrench, open end, adjustable . . . FSN 5120-449-8083 . . . is back in its old stable.)

KEEPING UP

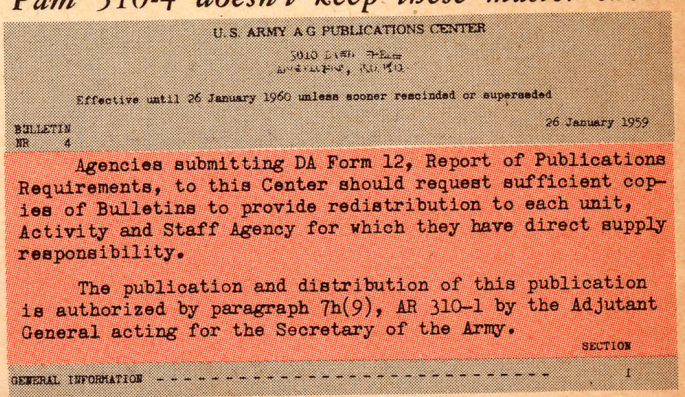
Dear Editor,

We've been having a little trouble keeping up with all the modification work orders coming out on our equipment. It seems the past few years that MWO's have come out pretty fast—and it's hard to keep them all applied since DA Pam 310-4 is usually about 6 months behind.

Last year I originated a master MWO sheet to make things more simple for us and save the government many manhours a year. We have one for each type vehicle that we inspect.

Elmer D. Stirn
Fort Lewis, Wash.

(Ed Note—Gr-e-a-t! When DA Pam 310-4 doesn't keep these master sheets up-to-date, you can fill in the gaps on the latest MWO's with the AG Publications Center bulletins that come out weekly. Don't suppose it would be necessary to remind everybody the first paragraph of each AG bulletin says post publications can order individual copies of the bulletin for every unit and activity it supplies. Also—there're no regs against keeping an extra record—like these master sheets—but be careful not to make too much extra work. You could limit each list by dropping off the older MWO's that have already been applied on the vehicles you're inspecting.)



U.S. ARMY AG PUBLICATIONS CENTER

Effective until 26 January 1960 unless sooner rescinded or superseded

BULLETIN NR 4 — 26 January 1959

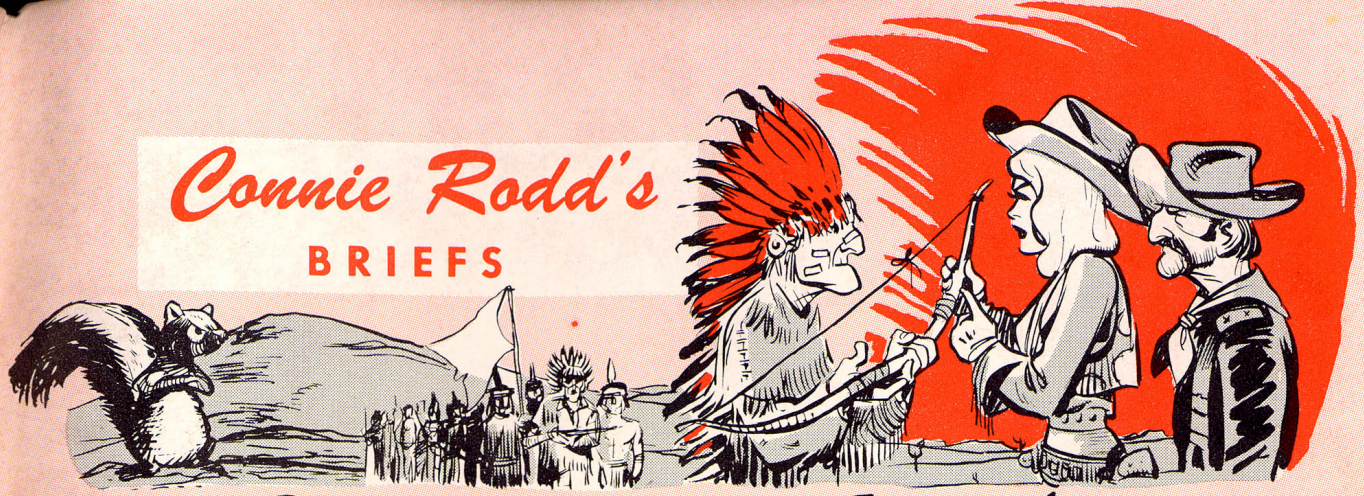
Agencies submitting DA Form 12, Report of Publications Requirements, to this Center should request sufficient copies of Bulletins to provide redistribution to each unit, Activity and Staff Agency for which they have direct supply responsibility.

The publication and distribution of this publication is authorized by paragraph 7h(9), AR 310-1 by the Adjutant General acting for the Secretary of the Army.

SECTION I

GENERAL INFORMATION

Connie Rodd's BRIEFS



Short stopped

Just about everybody and his brother have business now and then with lead-acid type storage batteries. That's why you'll want to latch on to the new TM 9-6140-200-15 which covers all echelons of maintenance on those batteries (as you can tell by that —15). Trouble is, the distribution formula for that manual just takes it down to division level and Ordnance support units. Get yours by justifying your requisition with the "need-to-know" provisions of para 41b in Change 4 (31 March 58), of AR 310-1.

The command way

TM 9-2810 (4 Aug 58), para 42, says you get your publications for tactical motor pools from the different tech services. But Change 4 (31 Mar 58) to AR 310-1 is the higher authority. Para 41 of the change says the Adjutant General's Office is responsible for **distribution** to post publications. Local commanders take over from there. . . major commanders run this deal overseas. That business of getting pubs from tech services was rescinded by DA Circular 310-43 (22 Aug 58).

Your order, please

Does your outfit get enough copies of PS every month? And other maintenance pubs as they come out? No! Then, you've got to make sure your post publications people know how many your unit needs. They ship the post's order into the publications depot on DA Form 12 (1 May 58).

Forget about it

No use puttin' in requisitions for Compound, Cooling-System Conditioning and Antiseepage, which TB Ord 1001 (15 Oct 57) says to use to stop leaking cooling systems. This stuff is presently frozen in stock and is not authorized for issue.

This also means you'll forget what I told you about that same stuff in PS 67.

Get it

Now for some scoop for any guy who works around a Skysweeper, Skysweeper fire control equipment, M33 FCS or Nike-Ajax FCS. You want to get hold of Cir 310-52 (10 Nov 58) which tells you to forget about some MWO's altogether if you haven't already applied 'em.

Ordnance tool sets

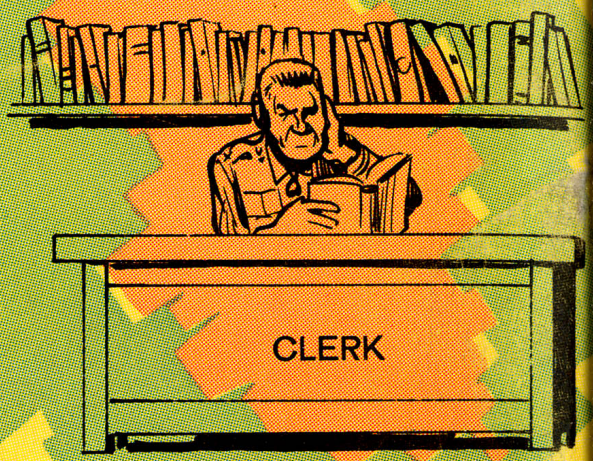
Have you seen AR 725-930 (23 Dec 58)? It says that Ordnance special and common tool and shop sets will be requisitioned and issued as complete sets only on initial issue. After that you have to order by individual items from the responsible tech service.

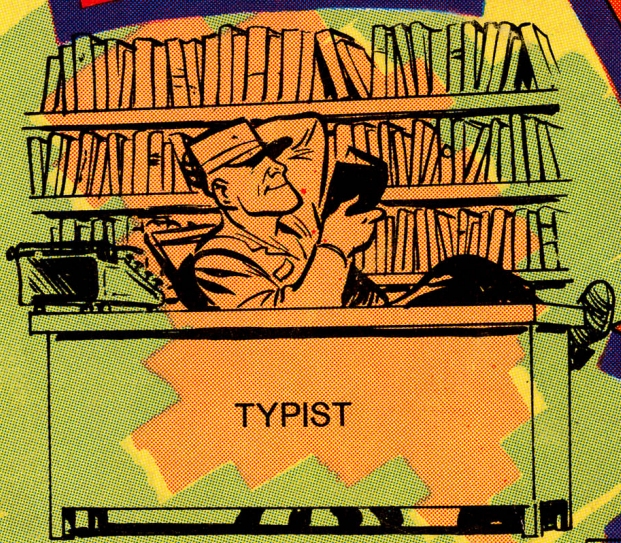
Welding worries?

Welding worries won't weary welders who want whole wisdom while working. Just get TM 9-237 (Oct 58) on welding theory and application. Initial distribution should have carried it down to your battalion (or separate company) level.

Would You Stake Your Life on the Condition of Your Equipment?

HE NEEDS THAT TM



HE DOESN'T

HIM, NEITHER